

ALBINUS  
ANATOMY OF PAINTING  
1831















F. 102

THE  
**ANATOMY OF PAINTING;**

OR A

SHORT AND EASY

**INTRODUCTION TO ANATOMY:**

BEING A NEW EDITION

OF

**THE SIX TABLES OF ALBINUS,**

WITH THEIR LINEAR FIGURES.

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WITH

**AN INTRODUCTION,**

GIVING A SHORT VIEW OF PICTURESQUE ANATOMY.

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**BY JOHN BRISBANE, M.D.**

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Sic ego nunc, quoniam hæc ratio plerumque videtur  
Tristior esse, quibus non est tractata, retroque  
Vulgus abhorret ab hac: volui tibi suavil oquenti  
Carmine pierio rationem exponere nostram,  
Et quasi Museo dulci contingere melle,  
Si tibi forte animum tali ratione tenere  
Versibus in nostris possem, dum perspicis omnem  
Naturam rerum, qua constet compta figura.

LUCRET.

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1831.







## P R E F A C E.

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IT is doing service to mankind to extend the knowledge of any useful art, and to render it more easy and delightful. Many would incline to have some knowledge of the structure of the human frame who dislike actual dissection, and who cannot relish the common dry and tedious method of treating anatomy. Dissections of the human body, in schools of anatomy, are often seen to very little purpose; on the contrary, it would be an easy matter to teach the most useful part of anatomy by models and figures alone, properly explained, so far as to satisfy every one except those who studied it as a preparation for the practice of physic and surgery; and even in that case, anatomy might be taught in a much shorter and more agreeable manner than is commonly done. Many writers upon arts and sciences, and particularly upon anatomy, seem to have no just idea of the nature and utility of figures, and most anatomists confine that art almost entirely to the purposes of physic and surgery; whereas it is necessary, in a particular manner, to those who study and practise the arts of design, and ought to be taught and wrote upon with that view by men skilful in these arts. For though physicians and surgeons have, for a long time, engrossed the whole business of teaching anatomy, yet painters, statuaries, and engravers should assert their rights, and teach and write upon this science in a picturesque manner, suited to their own art, in which it is as immediately and essentially useful as even in physic and surgery; for no one can possibly treat of anatomy for the use of painters, so as to satisfy and be agreeable to true judges and lovers of the arts of design, unless he himself is skilled in these arts, and in the true application of Anatomy to Painting.

As to anatomical figures, though at present too much neglected, they were not only used by the ancients, and early introduced by the great restorers of modern anatomy, but are pursued and improved to this day, with great judgment and skill, by the most learned and eminent anatomists; and their construction and use ought in a particular manner to be understood by those who teach or who study anatomy with a view to the arts of Design, though they are most worthy of the study and attention of anatomists of every kind. Accordingly Vesalius, physician to the Emperor Charles V., the great restorer of anatomy and surgery among the moderns, in his immortal work on the fabric of the human body, gave admirable figures of the bones and muscles, especially the external orders: he lived at a time when painting flourished in Italy to a very high degree, and many of his figures not only give the greatest delight and instruction to an anatomist but also to a painter. His great rival, Eustachius, pursued a different plan; more accurate in anatomical truth, diligent in the highest degree, learned, and ingenious; but without the noble fire and manly freedom of Vesalius. The figures of Eustachius are the most valuable part of his remains, and though, as to the painter's art, simple and unadorned, are most clear and instructive to an anatomist, and executed with great judgment, so that even in our days they are held in the highest esteem; and indeed neither the particulars they contain (and they may be said to contain almost an entire system of the anatomy that was then known), nor the skilful manner in which they were constructed, were understood till pointed out and explained by the great Albinus; who, together with the utmost judgment and accuracy, has added true elegance to every part of anatomy, but in a particular manner to anatomical figures, and has even in a manner accommodated them to the art of painting. And, if I may judge from the labour it cost me to follow his footsteps in an exact copy of some part of his works, the labours he himself has undergone must have exhausted the utmost extent of human patience, especially in one so eminent for elegance of genius, a character generally so impatient of tedious and laborious pursuits.

The Six Tables of Albinus, which are now published in a smaller form, though they may serve as an introduction to anatomy, and as an ornament to hang up in the studies of such as love that science, are chiefly intended for the use of those who pursue the arts of Design, in order to awaken their attention to this part of their profession, and as a specimen to form the taste of youth, early, to a love of elegance in anatomy, and to show them how much shorter, more easy, and agreeable it is, to be introduced to that science by means of figures, than by tedious systems, and lectures upon dead bodies alone. The smaller form was chosen, to make the tables more portable, more fit for study, and at the same time to come at a lower price. Though small, they are of such a size as to contain, in the distinctest manner, whatever is expressed in the large originals from which they were copied, some entirely, and others partly, with my own hand; and engraved, under my own eye and constant direction. No time and expense were spared to give them all the perfection that copies of such inimitable originals were capable of. The back grounds were omitted, not only to save labour and expense, but as Tables of so small a form did not so much require these ornaments, and by want of them the figures seemed to appear with more distinctness and perspicuity, and to be fitter for the use of science. To the outlines or linear figures, on account of the size, I was obliged to add figures of particular parts as large as the originals, otherwise I could not have found room for the letters or marks of reference; this I hope will not be inconvenient to the reader, the separate parts being placed all around, near the corresponding members of the entire figure, and as it were in the same attitude and direction, so that the eye passes easily from the one to the other; and what letters are not found on the entire figure must always be looked for on the separate corresponding parts.

I have also ventured to premise a short introduction to anatomy, in a manner suited to the use of the lovers and practisers of the arts of Design; and as the attempt is somewhat new, I hope its faults and imperfections, with the others found in this work, will meet with the favour and indulgence of learned and candid judges.

JOHN BRISBANE.







## INTRODUCTION TO THE TABLES,

GIVING

### A SHORT VIEW OF PICTURESQUE ANATOMY.

ANATOMY, like many other parts of learning, has often been described with too much minuteness, so as to make it tedious and disagreeable, even to the lovers of the art. Great judgment and skill are required to reject the useless, and to retain, arrange, and adorn the useful parts of science, and apply them to practice, so as to be agreeable to men of genius, and fit for the generality of mankind, leaving the minute and less useful things to the study of the curious; and notwithstanding the many large systems and abridgments already published, a short and elegant system of Anatomy is still greatly wanted, fitted for general use and for men of liberal education, and particularly for the practisers and lovers of the arts of Design: and it would appear that a method, chiefly by good figures and explications, would best of all answer that purpose; for what more natural, short, and agreeable way can be devised to explain the mechanical structure of any machine, than by presenting it to the eye in a series of proper figures? nor could the fabric of the human body be sooner or more agreeably learned, or deeper fixed in the memory, than by copying the best anatomical figures; and indeed many other parts of knowledge might be sooner and more agreeably taught by the assistance of Drawing than by any other method, for which reason Drawing ought to be an universal piece of education, and constantly taught along with writing, which is only a species of it.

According to the views that those have who apply to the study of anatomy, their attention must be applied to different things and in a different manner. Thus a physician must study anatomy on an extensive plan, and with very enlarged views, so as to understand not only the larger parts and gross mechanism of the animal, but also to penetrate into its most intimate structure, so as to discover, if possible, the most minute vessels, cells, pores, and fibres, upon which the various functions of the animal depend, and which are the seats of particular diseases, or by means of which remedies may be applied to the whole body or its particular parts: nor must he understand the solids only, but also the fluid parts, which nourish the former, and are themselves the seats of diseases, and act upon the solids, sometimes as poisons and sometimes as remedies; nor ought the finer parts by which the body is governed, and even the mind itself, so far as it acts upon and is connected with the body, to be less the subject of medical study than the body itself: otherwise a physician must have very imperfect ideas of his profession and of the animal machine, and often fail in his cures, because many diseases are wholly or partly cured by the movements of the mind, or by applying the remedy first to the mind, and thereby producing the wished for effect upon the body. And, in like manner, the whole extent of nature, in so far as it can any way influence or affect the animal machine, either to injure or restore it, is also the true and necessary subject of medical study; from all which may be seen the importance of the medical profession, and the great extent and difficulty of it, especially as so much judgment, honour, humanity, and industry are constantly required in the practice of it; otherwise opportunities must be lost, and the greatest mischief done; and an art destined for the protection and safety of mankind be converted into the greatest curse to society.

A surgeon on the other hand, though he ought to have at least a general idea of the animal economy, and indeed of every part of medicine, yet his chief anatomical study should be confined to know exactly the bones, with their joints, and the muscles, together with the large blood-vessels and nerves, and the situation and mechanical structure of these parts, which are to be the subject of, or ought to be skinned in performing, operations, or are the seats of surgical disease, or to which external remedies are most properly applied.

But a Painter, or Lover of the Arts of Design, must study anatomy with other views. As the representation of the outside or surface of the human body is the chief object of his art, he ought to study the structure of the body, and its inward parts, chiefly as they affect or are referred to the external surface, and make their appearance there, or are assistant in the better drawing and representation of it. Hence the parts which show themselves upon or affect the surface of the body, ought to be the chief object of the study of a painter. The parts therefore that lie nearest to the surface or outside of the body, and consequently that are most immediately concerned in forming its outline, are first to be considered by a painter, viz. the external layer of muscles, especially the larger ones, and those that are most subject to appear in the movements and attitudes of the body. But though the parts nearest to the surface are the first and most obvious that belong to the study of a Painter, yet nature has so contrived the human body, that the external parts cannot be well understood without a just idea of the internal ones, even of those which are as it were buried in the centre of the body: I mean the bones or skeleton, which are the foundation and frame on which the whole fabric is built, and to which, as a basis, all the other parts are mediately or immediately referred, particularly the muscles, so necessary to be known by Painters, which are chiefly inserted into the bones, and make considerable marks and impressions upon them; and consequently, without the knowledge of the bones, the muscles and other soft parts cannot be understood. But there is another reason why the bones must be studied by a Painter, viz. because parts of the bones, though covered by the integuments, appear obviously to the eye in many places of the body, and, like the large muscles, are there the cause of the outline, and of the character, proportion, beauty, and appearance of many parts; and, when properly considered and understood, the bones, by so many fixed points, give the finest direction to a painter, not only how to find and place the muscles, but also how to draw the human body; nor can it be so justly or readily drawn by any painter, as by one that understands anatomy in a masterly manner, and particularly the bones and external muscles, and can point them all out upon a living man, and by means of that knowledge determines all his points, and the forms and proportions of every part and member, adding one part to another as he knows they lie upon the body: this is the true and natural method of drawing the human figure, and is a much easier and completer way, to one who understands anatomy, than any artificial or mechanical method by squares, or by dividing the body into so many heads, or by trusting merely to practice and memory, or a servile imitation of any master. But though the bones and external muscles are the most necessary part of the anatomical study of a painter, yet at least a general knowledge of the whole fabric is of great use, in order to a more complete and masterly representation of the human body, and in order to be able to diversify, and give a reason for every appearance; and not only the solids must be known by a painter, but he ought likewise to have some idea of the fluids, as on these chiefly depend the various tints and colours of the skin that appear in the different sexes and ages of life, in different characters and occasions, climates and nations. And as nature has so contrived the human frame that the movements and passions of the mind affect the body, and are evidently seen and distinguished upon the countenance, and are expressed there and in other parts of the body by strong and certain characters, and as this



is the most delicate and highest part of the Painter's art, by which he is capable to move, to delight, and to instruct mankind, and to recommend himself and his art to their esteem and admiration; therefore, the study of the mind, and its various characters, passions, and movements, in so far as they are marked upon and expressed by the body, ought to be above all things the study of a painter: for as the members of the human body, in a good picture, beautifully appear through the drapery, and as the bones and muscles appear through the skin, so the mind itself, in all its characters and passions, appears upon the countenance, and in the expressive proportions, attitudes, and tints of various parts; by which, as in a pantomime or dumb representation, a printer can as it were speak to the beholders, and, by lines and colours alone, can perform the same effects with the musician, the poet, the orator, or the actor upon the stage of mimic or of real life.

A Lover of the Arts of Design, or indeed any anatomist of true taste, will look upon the human body and all its parts with the eye of a painter, otherwise he will see and describe it in an ignorant and rustic manner: this picturesque turn we observe in few modern anatomists, but rather a great ignorance of it, the generality seldom rising above mechanical ideas, and many of them have even been ignorant of geometry, and every polite and liberal science, though absolutely necessary to a true knowledge of anatomy. Observing the human body with the eye of a painter enables us to see it in all its beauty and perfection, and raises in our minds a thousand ideas of the uses and propriety of the several parts, whereof one ignorant of painting will be totally insensible.

Having premised these few observations, I might remit the reader to the Tables themselves, with their explication; by the careful perusal of which, a tolerable idea may be formed of the skeleton and external muscles; but the young anatomist and painter will perhaps better understand them, and with more ease and pleasure, and be able more fully to connect the particulars, and apply them to the arts of design, by means of the following short sketch of Picturesque Anatomy, which, in its turn, will also be better understood by consulting all along the Tables and the explication, this Introduction and the Tables mutually tending to explain and illustrate each other.

#### OF THE SKELETON.

The system of the bones or skeleton is, as it were, the solid frame that contains, defends, and gives stability to the softer parts, and to which they are ultimately attached; and consequently this bony fabric has of itself the general form, size, and appearance of the entire body (Tab. I. II. III.) This solid frame is most artfully composed of different parts, jointed one to another, so as to be capable of every useful and graceful motion, in the whole and in all its parts; and the various bones and pieces of which it is composed differ in size, form, and strength, in position, connexions and motions, according to the uses and exigencies and even the beauty of every part, to which they often add a certain grace and character, by obscurely appearing here and there through the soft parts, even in the living body. The head, which the painters consider as an oval, (Tab. I. II. III.) is, as it were, the dome or cupola to the whole edifice. In this highest part the senses are placed, and the brain defended by solid bone; the head, like the rest of the body, derives its size, form, proportions, and principal characters first from the bones, but the soft parts that cover them add the life, the motions, and the finishing beauty, in which last the hair also concurs; and it is surprising how so few simple organs, and so thin a covering of soft parts, are capable of such infinite variety of forms and expressions as we see in the human countenance, affording an endless field of study. In the head the bony part is a more complete fabric, and comes nearer to the form of the entire body than in any other part of the skeleton; and being the seat of so many noble organs, and the chief part to be studied by a painter, it deserves the first place, according to the common custom of anatomists. Here vestiges of the smooth polished bone show themselves on the forehead, in the risings all around the eye, in the hollow of the temples, on the nose and cheek bones, and margin of the lower jaw, giving great pleasure to a painter that understands anatomy. Next comes the elegantly bent pillar of the spine, (Tab. III.) strong, yet flexible, by consisting of so many parts firmly tied together. This bony column, at the same time, gives size, strength, and motion to the body, attachment to many surrounding parts, and being hollow throughout its whole length, serves to conduct and secure the spinal marrow, and to transmit nerves to every part of the trunk and extremities. The spine consists of four and twenty vertebræ, (Tab. I. II. III.) generally increasing in size as they descend, and gradually varying in their figure: seven of these vertebræ belong to the neck, which admit of peculiar and considerable motions, and allow of many graceful movements to the head and neck. The next twelve belong to the back, these are almost rigid, and admit of very little motion; to these, as to a solid basis, the twelve ribs of each side are attached, which, together with the sternum and their own cartilages, form a kind of yielding cage or basket, to contain the heart and lungs (Tab. I. II. III.) This bony cage admits of a small motion when we breathe; and to the lower margin of it all around is fixed the diaphragm, a transverse muscular partition, dividing the thorax from the abdomen, a main organ of respiration and of other functions. The five lower vertebræ belong to the loins, and admit of considerable motion, of great use in the firm and graceful attitudes and flexions of the trunk, and in many offices of common life. Between the ribs and pelvis there is a great void in the skeleton, especially before (Tab. III.) In this space lie many of the abdominal viscera, with the parts that contain and cover them, making on the forepart the beautiful swell of the abdomen, elegantly marked by the containing parts (Tab. IV.) To the superior part of the thorax, by means of the transverse clavicles and of large and strong muscles, are appended the upper extremities, which at the shoulders give breadth to the thorax above, and serve many noble purposes of strength, of art, of defence, of expression, and of beauty. These are divided into the shoulder, consisting of the clavicle before, and the thin broad scapula behind, which, moving free among the muscles, by their means governs the motions of the whole arm; and its triangular form has a most beautiful effect, seen floating among the soft parts in the naked figure (Tab. V.): and indeed the whole shoulder is a most noble part, and a fine exercise to a painter who understands anatomy, for, besides many fine large muscles, the bones themselves also most beautifully and distinctly appear. Next comes the arm bone, capable of a large and free motion, whose round head at the shoulder in lean persons obscurely appears, and at the lower end its condyles are evidently seen, where it is joined to the fore-arm; this consists of the radius and ulna, which move upon the arm bone with the more confined motion of flexion and extension, but, for the sake of the hand and its various and important uses, the radius and ulna likewise revolve upon each other lengthways, in a very curious and singular manner, turning the hand alternately prone and supine, as upon an axis. Lastly comes the hand itself, the most simple and curious machine in nature; it consists of the carpus, metacarpus, and five fingers, the thumb being as it were an antagonist of the other four; the whole, by its general form, and different parts and motions, serving almost every possible use, and its various attitudes being capable of great beauty and variety, an infinite field to painters, and most worthy of their study, and indeed, next to the countenance and the voice, the most beautiful and expressive part of the human body.

We now come to the pelvis and lower extremities. The pelvis supports and defends the lower viscera. The back part or os sacrum (with its coccyx), of a triangular form, is as it were the basis and continuation of the spine, the vertebræ of which it obscurely resembles, and performs its offices, by receiving the extremity of the spinal marrow, and transmitting nerves to the surrounding parts. The lateral and fore parts of the pelvis, though fixed and immoveable, answer in some respects to the scapulæ and clavicles, as they afford sockets for the thigh bones, and also a seat to many strong muscles that belong to the trunk and extremities. The upper margins of the ossa ilium appear gracefully in the living body on the forepart, and form a kind of boundary between the belly and the thighs. The spines of the os sacrum, as of the vertebræ, obscurely appear in bodies not loaded with fat, as also the great trochanter of the thigh, the rest of which bone, till you come to the knee, is deeply immersed among large and strong muscles: but at the knee the bones make a very fine appearance, viz. the condyles of the thigh bone, the tops of the tibia and fibula, and the round patella (Tab. I. II.), a bone so beautiful and so useful in the government and defence of this joint. Here skilful painters and sculptors never fail to show



their art, not only in the entirely naked figure, but in some ancient Roman habits, in which this beautiful joint appears; and indeed the ancient dresses, and even some of the Gothic ones, greatly excel the modern, as they not only clothe but adorn the human body, showing its several parts to advantage, and giving a noble field to painters and sculptors. The bone of the tibia appears through the whole length of the leg, and at the lower part of the tibia and fibula the two ancles elegantly appear, and fix the bounds between the leg and foot. The foot, a thick and solid part, serves as a basis and support to the whole body, and therefore its parts are only capable of obscure motion; it consists of the tarsus, metatarsus, and toes: in the whole, and in every part, it in some sort resembles the hand; and, though much inferior, comes next to it in beauty, and therefore great artists take pleasure in showing it naked in all its varieties.

The various conformation of certain parts, chiefly at the extremity of bones, is the principal cause of all the variety of the joints, which are completed by means of ligaments that bind them together, and of smooth cartilages, and a certain lubricating moisture to enable the articulated parts to slide quickly, smoothly, and gently upon each other. By means of the joints the human body becomes a moving fabric, a thing necessary in the common offices and arts of life, and also for health, defence, and amusement. By the joints, most of which so elegantly appear to the eye, the body is not only subdivided into a multitude of well proportioned parts and members, composing one harmonious whole, beautiful to the eye, but is thereby capable of an infinite variety of useful, expressive, and graceful attitudes and motions; and though every joint has its peculiar use and extent of mobility, determined by the nature and conformation of the parts that compose it, yet the joints, as we shall see afterwards of the muscles, seldom act separately and alone, but, like these, beautifully co-operate one with another in all the principal attitudes and movements of the body; so that in many positions, almost all the joints, as well as principal muscles, are more or less concerned, and act in harmony one with another, having each a certain share in these useful and beautiful movements. But a particular description of the different joints, with such observations on them as properly belong to the painter's art, though a most curious and useful part of anatomy, would be too tedious for a short introduction of this kind.

Though there are only male and adult skeletons represented in these figures, we may observe that the difference of sexes and of ages is seen even in the skeleton, as well as in the entire body; not to mention the difference of stature, and of the size, strength, and form of particular bones, even to the fingers, the different proportion of the shoulders and pelvis in the two sexes is remarkable. In the male, the shoulders are broader and the pelvis more narrow; the contrary is the case in the female skeleton: and, besides, the whole has a more feminine appearance, the bones are smoother and more delicate, with much less roughness from the impressions of the muscles and surrounding parts. The like may be observed of the skeletons of children, the whole of which have the same appearance, and the parts the same proportions with the corresponding parts of the entire child. The large globose head, the round face, the shortened trunk and extremities, the bones thick, soft, and almost everywhere imperfect, the processes, protuberances, and marks of impression less evident, and the bones consisting of many parts and divisions, which are afterwards united in the hard and perfect bones of adults.

#### OF THE MUSCLES.

The skeleton is one simple system of solid parts, seen as it were at one view, and serving as a jointed frame on which to build the rest of the body. But the muscular or fleshy parts, that clothe and move the skeleton, are soft, and form a more complicated system, consisting of different strata or layers, one covering another, and divided into numerous portions of different size and figure, regularly disposed over the whole body, composing a great part of its bulk, and the chief cause of the size and form of the members; for when stript of its uniform coverings, viz. the skin and cellular or fatty membrane, the external muscular figure nearly resembles that of the entire body.

The muscles differ greatly in their size, figure, and other particulars, according to the parts where they are situated, and the uses to which they are applied. But in general they are composed of fibres; the middle part or belly being large, soft, and red, and the extremities or tendons, which are generally inserted in bones, being smaller and harder, white and shining; the red part is properly the moving power, and acts by contraction, during which it swells, becomes hard and shorter, sometimes to a great degree, and thereby pulls the parts to which its extremities are affixed. The muscles are governed by the power of the will, except the fibres of the heart and of the intestines, which of all others are the most irritable; the muscles of respiration act in both ways. The muscles can act in the most gentle and delicate manner, and also with great strength and velocity, though much of their power is lost by the places and manner in which they are often situated and inserted on the parts to be moved. The causes of muscular motion are difficult to be accounted for from the known structure of muscles; great velocity communicated to the nervous fluid by the mind, so as to stimulate the fibrils, seems the most probable account. The muscles are arranged in their places, and allowed to slide upon each other, by means of the cellular or fatty membrane, and their fibres are lubricated everywhere by the oil which it contains; and in the fabric of the body, and of the muscles themselves, many contrivances are used to assist their actions. The muscles are in sufficient number, and so disposed and contrived, as to be a covering and defence to the more inward parts, as well as to move the joints in all the directions they are capable of, to assist in many functions of the body, and to place and retain it in every possible attitude; in doing which the particular muscles seldom act alone, but in the most various manner co-operate with or oppose each other: so that the whole muscular system may be considered as one muscle, every fibre being entirely under the power of the will, at the pleasure of which the whole body and all its parts are at once or alternately moved and governed, as it were by so many bridles. Besides this grand purpose of the muscles, they likewise serve the general uses of the animal machine, being the chief cause of respiration and of the circulation of the blood and juices, also promoting digestion, absorption, secretion, excretion, nutrition, and growth; and by their incessant action are one great cause of the hardening and wasting of the body, and the decays of old age.

This is a general idea of the muscular system; but a painter must study it with particular views to his own art. He must consider that the muscles chiefly form the size and outline of the body; that many of the external muscles have regular forms, and beautifully appear at all times under the skin, but especially when in violent action; that in that case even deep seated muscles sometimes appear, as also more clearly the bones and other parts; that the different parts of the skeleton bearing obliquely upon each other, in order to preserve the equilibrium, changing their actions and appearances on the surface of the body, as the various postures, attitudes, or exertions require. These appearances he ought diligently to observe, even in different bodies, and compare them with his knowledge of anatomy, in order to apply them justly on proper occasions to adorn his figures. In this the ancient artists far excelled the moderns; and indeed, not to mention their other advantages, they had better opportunities of observing the naked body in the gymnasia, when employed in the manly exercises of the palæstra. The ancients were perfect masters in applying anatomy to the arts of design; they not only knew the general form and places of the muscles, but how to vary their appearance in every degree of action and of character. The muscles of a Hercules, for example, differ from those of an Apollo, and of an Apollo from those of a Venus, in the same character and stile as the figures themselves: the muscles of the Dying Gladiator seem to die along with him, and in the Fighting one, and the Wrestlers, they are agitated like the figures themselves, and the parts to which they belong. In the Laocoon they seem to be convulsed and trembling. In beautiful bodies they are beautiful, as they ought to be; but in the deformed, as in Silenus, the muscles are deformed in his whole figure, and so in other varieties; whereas in many modern works, not only these judicious and delicate expressions are unknown, but the greatest ignorance in anatomy often appears, either by false representations, or by a dull and injudicious ostentation of anatomical knowledge on every occasion; the same muscles appearing, and almost in the same character, in every figure, and either inanimated like the simple dissection of a dead body, or swelled and contorted in an extravagant manner; while some, more prudent, and conscious of



their ignorance of anatomy, represent the human body like a skin stuffed with wool, without any marked distinction of bone or muscle: others are totally ignorant of the co-operation of muscles, and how to allow their general effects to appear without bringing the particular muscles to view, as in many fine expressions about the eyes and mouth, and in other parts of the body. So that, after being perfectly master of common anatomy, much skill and judgment is still required in order to apply it properly to the arts of painting and sculpture.

We shall conclude what we have to say of the muscles with a short view of the external layers, as they appear in the three muscular tables now published; confining ourselves chiefly to the use of painters and sculptors.

In order to understand these figures aright, the three muscular tables must be considered and compared together as one, under the idea of a solid figure, which can be turned round and presented to the eye in different views; especially the front and back, which are in the same attitude, and contain in themselves the entire round of the body. And in the like manner may be compared the three views of the skeleton. This being done with care and attention, each skeleton must be compared with its corresponding muscular figure; and both the one and the other with the entire living body placed in the same attitude; by which a tolerable knowledge will be acquired of the anatomy of the human body, in so far as it belongs to the arts of design.

Though much might be said for the use of painters, not only on the different strata or layers of muscles, but also upon particular muscles, yet at present we shall confine ourselves chiefly to the external layers that appear in these tables, and which lie immediately under the skin and cellular membrane, and retain so much the entire figure or outline of the body, that painters generally inscribe these muscles upon that outline as a basis. However, as some deep-seated muscles on some occasions more or less appear, at least by their effects; particularly the diaphragm, that as an antagonist supports the beautiful swell of the abdomen, and the muscles that support the trunk and govern the spine, also the muscles concealed in the orbits of the eyes, so useful in expressing the passions and movements of the soul; I shall only just mention that such muscles exist, and ought to be known by painters, though they do not appear in these tables. But as to the layers or strata of muscles, and particularly the external one, we may observe in general, that though they might have effectually served the purposes of moving powers, and indeed all the other uses of muscles, by being formed of less regular figures and placed on the body with less exact order and composition, yet nature, consulting grace and beauty as well as utility in all her works, has so contrived the muscular system, that, while it effectually performs its several functions, not only the particular muscles are formed, with great variety, into beautiful and regular figures of a size and appearance suited and proportioned to the several parts, but the whole together is so disposed as to exhibit an agreeable composition to a lover of anatomy; and they are so placed and secured, that, in their most violent actions, they cannot start up so far from their true places as to hurt or deface the form of the body or of its several parts, but rather, by their gentle swellings and depressions, tend to encrease its beauty; and to gain this end nature has made a great waste of muscular strength. Of the different strata of muscles, the external one, represented, in these figures, is more beautiful than the hidden or internal ones because it consists of larger and more regular masses than the internal strata, and as the whole comes nearer to the form of the entire body. Again, of the three external views that of the front is most beautiful, not only on account of the face, and because the limits of the trunk are more exactly determined both above and below, and as the extremities seem to belong to the fore-parts, and are there more beautiful; but also because in the front there is more variety and elegance in the muscular appearances. The back view, though in some respect more rude and simple, likewise has its beauty, especially about the neck and shoulders; also about the hips and the whole lower extremities, whose bones and muscles are larger and stronger than those of the superior, suited to the size and office of the parts. The profile or side view, both in the skeleton and muscular figure, shows many particulars that cannot be so well perceived in the others; for example, the direction and bearing of the parts one upon another, and how far they project both before and behind; as the head over the neck, the various curvatures of the spine, and so of other parts; it also shows some parts more fully, and others in a more pleasing attitude; and, from the profile, you may likewise compare the proportions of the narrow lateral view of the body with those of the front and back.

By these figures we may perceive that the number and strength of the muscles are everywhere suited to the several parts they serve and the joints they move. Thus the muscles on the trunk are few, but generally large, broad, and flat, serving for walls and coverings as well as moving powers; but on the extremities the muscles are numerous, and mostly oblong, suited to the size, form, and action of these parts, and the many joints to be moved. About the shoulders and hips the muscles are short, broad, thick, and strong, giving the idea of that strength necessary for strong and violent action, and to command large members that are so constantly in motion; whereas about the fingers, which besides the strong are also intended for arts and delicate movements, we find many smaller muscles; and still more so on the face, and about the organs of the senses and of the voice. Lastly, the deep seated muscles that command the spine, run as it were parallel to that bony pillar, and are beautifully subdivided like the spine itself, so as equally to govern every part of it.

As to the description and uses of the particular muscles, especially of those that afford the most strong and beautiful appearances, not only in these three views but in every attitude and action of the body, we cannot enter into it in this short introduction; but the principal things may be understood by what has been already said, and by examining these, and other good figures, and comparing them with nature and the works of the best artists. We may also observe, that, of the muscles that are seen evidently in these figures, the most remarkable are—on the head—the muscles of the face that govern the features, the temporal and masseter that move the lower jaw; on the neck—the sternomastoid of each side before, covered by the latissimus colli, that so beautifully show themselves in the motions of the head and neck; on the shoulders—below the clavicles, the pectoral and deltoid; and behind, the large triangular cucullares, that chiefly support and govern the scapulæ, reaching to the head; on the trunk—the abdominal muscles, and the beautiful indentations of the great serrati, and, behind, the latissimus dorsi, and several muscles that lie upon the scapula, viz. the teres major, teres minor, and infraspinatus; on the thighs—before, appear the recti and vasti that extend the knee and chiefly support the thigh on that joint when we stand, the beautiful transverse band of the sartorius, and on the upper part the tensor vaginæ, and, more internally, part of the internal iliacs, psoæ, pectinei, great and long adductors, that chiefly govern the thigh and support the trunk upon it; on the hips, and thighs behind—lie the great glutæi, and below these, besides part of several muscles just now mentioned, appear the muscles that bend the knee, and likewise help to support the thigh and trunk when we stand, viz. on the outside the bicipites, and internally the semitendinosi, on each side of which are seen the semimembranosi, also the graciles: the insertions of several of these muscles are most distinctly seen near the knee in the profile figure, and by comparing all the figures we may form an idea of the beautiful articulation of the knee and the other joints, the hollow of the ham and axilla, the various depressions between the muscles, the muscles that bend and extend the fore-arm, and compose the calf of the leg, many muscles that move the hands and feet, the fingers and toes, with their tendons and ligamentary bands; lastly, the parts of the bones that make their appearance here and there between all these parts. But for the particular description we refer to Albinus's own explication of these tables, and other anatomical works.

The three simple views of the skeleton and muscular figure presented in these tables, though in themselves not ungraceful, are chosen chiefly for the uses of elementary anatomy, to show all the parts in a plain and distinct manner, and the muscles are represented as they appear in the dead body, without the imitation of life and action, yet from these figures, well understood and compared with nature, joined to observations and experiments on the naked living body, and on the works of great artists, a skilful painter or sculptor will be able to represent the anatomical appearances of the human body in every other position, and also to add those swellings and sinkings and other marks that always accompany life and action, especially in lean and athletic bodies; in doing which, though the truth of nature ought to be the general rule, yet certain licenses may be often used here, as in the other parts of painting (provided they are conducted with judgment and skill) of



representing these appearances rather stronger on certain occasions than they actually are in nature ; whereby an artist may not only exercise his genius and invention, but give great pleasure and delight to the truly learned in anatomy and the arts of design.

Though the bones and muscles are the chief objects of the study of a painter, yet other parts must not be neglected, particularly the skin and the cellular or fatty membrane, and the large veins that appear on the surface of the body. The skin is not only the seat of those tints and colours that on many occasions characterise and adorn the outside of the body, and especially the countenance, but is also the seat of the folds and wrinkles of different ages, and that characterise different parts, and of those that express the passions and movements of the soul (for in the skin many small muscles of the face are fixed), and according as the skin is looser or tighter on the parts, or more or less bound down or supported by the cellular or fatty membrane, the appearances of the parts below them alter everywhere.

I may likewise add that painters, but especially those whose profession is to paint the brute animals, ought to be acquainted with at least the general principles of what is called comparative anatomy, otherwise they never can completely express the characters, the beauties, and varieties of these animals, which is only to be done by comparing their fabric with the outward appearance presented to the eyes ; and indeed it is a general rule that no subject whatever can be truly painted without understanding as a philosopher the nature and properties of it : for which reason historical and even portrait painters should be acquainted with the anatomy of those animals which are most commonly introduced into their works, particularly of that noble and useful animal the horse, and of that faithful companion of mankind the dog ; as for other animals, as they more rarely appear in pictures, and are less particularly known and attended to, a slighter knowledge may generally suffice, especially as nature having cloathed the brute animals with various coverings that hide the inward parts, the anatomical appearances in them are not so visible, nor indeed so beautiful, as in the naked body of man.

But in order to apply elementary anatomy to the arts of painting and sculpture, the works of the best artists must be consulted and studied, both of those who have actually applied it in practice, and of those who have written on this part of the principles of the arts of design. Though the works of the ancients, as has been said, excel all others in most particulars, so also in the judicious and delicate application of anatomy in these arts, yet modern times have produced many learned and accomplished artists, who have shown great genius and skill in this as in other parts of their profession. At the restoration of painting, Da Vinci was fully sensible of the use and importance of anatomy ; the great Michael Angelo used anatomy even to excess, but in a bold and manly character, and in this respect may be looked upon as the Vesalius of painters ; Raphael, his great rival, like Eustachius, softened anatomy more to the truth of nature and to the beauty of the antique, giving it at the same time the graces peculiar to his own genius ; Hannibal Carrachi is just and masterly in his anatomical expressions, and knew thereby how to give both strength and beauty to his figures. Many other great artists might be named of different characters in respect to anatomy, as in other parts of their art ; thus Rubens was fully master of anatomy, as of every art that could form an accomplished painter, and gave it the richness and strength peculiar to his manner, producing a new and riper era of the painter's art, which the tables and works of Albinus may be said to have done in anatomy. It were much to be desired that two such noble arts as painting and anatomy were always in the hands of such artists as I have mentioned, and like other liberal arts were not too often disgraced by the men who professed them.

Before I conclude, I cannot but congratulate our country on the great efforts that have been made of late years in this capital to promote and encourage the Arts of Design in all their branches, which had been hitherto so much neglected in this nation—Arts so useful and ornamental to every people, but especially to a commercial one—Arts which have been the delight of the greatest princes in all ages, and which have flourished along with politeness or sunk in times of barbarity—Arts which nature so strongly recommends in all her works by exhibiting to our eyes an endless field of study and delight—Arts by which the great nations of antiquity polished themselves, adorned their cities, and handed down their fame to distant ages, by buildings, by statues, coins, and other monuments—Arts by which modern Italy has attracted the attention and veneration of foreigners—Arts that, like eloquence and poetry, may be universally applied to every purpose, both of public and private life, to display and record the wonders and beauties of nature and art, to instruct and to polish mankind, to recommend wisdom and virtue, to punish and ridicule folly and vice, to ennoble religion by adorning the temples of the Gods, to add dignity to the state, to record great actions, to honour and reward private virtue, to illustrate sciences, to improve arts and manufactures of every kind, from the greatest to the least, and consequently to increase wealth and commerce.







# THE SIX TABLES OF ALBINUS.

## TABLE 1.

*The First Table contains chiefly a front view of the Human Skeleton. Some ligaments and cartilages are added, without which the system of the bones would be interrupted.*

### IN THE HEAD AND SPINE.

A The frontal bone.  
 B B The superciliary holes ; the left one is entire, the right is only a notch, and so partly defective.  
 C D The coronal suture, C here it is a true suture, D here only squamous.  
 E The left parietal bone.  
 F The squamous suture, made by the conjunction of the parietal bone with the squamous part of the temporal.  
 G The squamous suture, formed by the conjunction of the parietal with the great lateral process of the multiform, sphenoidal, or wedge-like bone.  
 H The squamous suture, by the conjunction of the frontal with the same process of the multiform bone.  
 I The great lateral process of the multiform bone.  
 K The suture common to that process and the squamous bone.  
 L The squamous part of the temporal bone.  
 M The entry into the bony parts which compose the organ of hearing.  
 N The mammillary process of the temporal bone.  
 O The zygomatic process of the temporal bone.  
 P The suture common to the cheek or jugal bone with the zygomatic process of the temporal bone.  
 Q Q The cheek or jugal bones.  
 R R The sutures common to the frontal and cheek bones, near the tails of the eyebrows.  
 S S The sutures which appear upon the cheeks by the conjunction of the cheek or jugal and superior maxillary bones.  
 T T That part of the cheek bones which assists in composing the sockets of the eye.  
 Between T and W The suture which is formed in the socket of the eye by the conjunction of the cheek bone with the superior maxillary.  
 Between T and C : T and C The suture common to the cheek and frontal bones within the orbit.  
 Between T and Y : T and Y The sutures common to the cheek bones, with the great lateral process of the multiform.  
 V V The fissures in the bottom of the sockets of the eyes.  
 W X The part of the superior maxillary bone which composes the bottom of the socket of the eye.  
 Between W and X The suture running along the canal that is stretched along the bottom of the eye socket, which suture likewise passes over the margin of that socket, and reaches to the exit of that canal, which exit is on the cheek, a little below that margin.  
 Between X and d The suture common to the superior maxillary bone and os planum (d).  
 Between X and e The suture common to the superior maxillary bone and os unguis (e f).  
 Y Y The parts of the great lateral processes of the multiform bone which help to compose the sockets of the eyes.  
 Between Y and c : Y and c The sutures common to the great lateral process of the multiform and frontal bone in the eye sockets.

Z The hole by which the third, fourth, sixth, and first branch of the fifth pair of nerves, &c. enter the eye socket from the cavity of the skull.  
 a The small process of the multiform bone.  
 b The hole by which the optic nerve, with a branch of the internal carotid artery, enters the eye socket from the cavity of the skull.  
 Between a and c The suture common to the small process of the multiform and frontal bones, within the eye socket.  
 Between a and d The suture common to the small process of the multiform bone and os planum, within the eye socket.  
 c c The parts of the frontal bone that help to compose the sockets of the eyes.  
 Between c and d The suture common to the frontal and plain bone.  
 Between c and e f The suture common to the frontal and nail bone.  
 d The plain bone.  
 Between d and e The suture common to the plain and nail bones.  
 e f The nail bone ; f the groove leading to the nasal canal.  
 Between f and g The suture common to the nail bone and nasal process of the superior maxillary.  
 g g The nasal processes of the superior maxillary bones.  
 Between g and k : g and k The sutures common to the nasal processes of the superior maxillary and nasal bones.  
 h The suture common to the nasal process of the superior maxillary and frontal bones.  
 i i The sutures common to the nasal bones and the frontal.  
 k k The nasal bones.  
 Between k and k The suture common to the nasal bones.  
 l The interior part of the nasal process of the superior maxillary bone, belonging to the nose.  
 m m The inferior spongy bones.  
 Between l and m of the right side The suture formed by the conjunction of the inferior spongy bone with the superior maxillary.  
 n o The plate of the cribriform or sieve-like bone, which helps to compose the partition of the nose ; o its extremity, to which is continued the cartilaginous part of that partition.  
 p The vomer or plough-share bone.  
 Between n and p A kind of suture made by the connexion of the vomer with the lamina of the sieve bone.  
 q The part of the superior maxillary bone that belongs to the inferior part of the nose.  
 r The suture common to the superior maxillary bones.  
 s s The superior maxillary bones where they form the cheeks.  
 t t The holes or exit of the canals that run along the inferior part of the eye sockets.  
 u The aliform process of the multiform bone.  
 w x y z The lower jaw ; x the hole or exit of the nerve and vessels from the canal in the lower jaw ; y the coronoid or sharp process ; z the neck, above which is the little head articulated with the temporal bone.



$\alpha$  The cartilaginous lamella in the joint of the lower jaw with the temporal bone.

$\beta \gamma \delta \epsilon \zeta \eta \theta \iota$ :  $\beta \gamma \delta \epsilon \zeta \eta \theta \iota$  The left teeth in each jaw;  $\beta \beta$  the first incisors,  $\gamma \gamma$  the second incisors,  $\delta \delta$  the canini or dog teeth,  $\epsilon \epsilon$  the first molars or grinders,  $\zeta \zeta$  the second,  $\eta \eta$  the third,  $\theta \theta$  the fourth,  $\iota \iota$  the fifth. The right teeth answering to these are easily understood.

#### IN THE SPINE.

$\kappa$  The body of the atlas or first vertebra, where it rests on the epistropheus and supports the head.

$\lambda$  The body of the epistropheus or second vertebra, where it supports the atlas.

$\mu$  The inferior oblique process of the fifth vertebra of the neck.

$\nu \xi \circ \pi$  The fourth vertebra of the neck;  $\nu$  the superior oblique process,  $\xi$  the inferior oblique process,  $\circ$  the transverse process,  $\pi$  the body.

$\rho$  The hole between the third and fourth.

$\sigma \sigma$ , &c. The ligaments between the bodies of the vertebræ that tie them together.

$\tau \nu \nu \phi \phi \chi$  The third vertebra of the neck;  $\tau$  the body,  $\nu \nu$  the transverse processes,  $\phi \phi$  the superior oblique processes,  $\chi$  the inferior oblique.

$\psi \psi \omega \omega \Gamma$  The second vertebra of the neck;  $\psi \psi$  the superior oblique processes,  $\omega \omega$  the transverse processes,  $\Gamma$  the body.

$\Delta \Delta \Theta \Theta \Lambda \Lambda \Xi$  The first vertebra of the neck;  $\Delta \Delta$  the superior oblique processes,  $\Theta \Theta$  the transverse,  $\Lambda \Lambda$  the inferior oblique,  $\Xi$  the body.

$\Pi \Pi \Sigma \Phi \Phi \Psi$  The twelfth vertebra of the back;  $\Pi \Pi$  the superior oblique processes,  $\Sigma$  the transverse,  $\Phi \Phi$  the inferior oblique,  $\Psi$  the body.

#### IN THE SPINE, THORAX, CLAVICLES, SCAPULA, SHOULDERS.

$\Omega \alpha \alpha \beta \beta$  The eleventh vertebra of the back;  $\Omega$  the body,  $\alpha \alpha$  the superior oblique processes,  $\beta \beta$  the transverse.

$c$  The transverse process of the sixth of the back.

$d d e e$  The third vertebra of the back;  $d d$  the body,  $e e$  the transverse processes.

$f g g$  The second vertebra of the back;  $f$  the body,  $g g$  the transverse processes.

$h$  The body of the first vertebra of the back.

$i k k$  The fifth vertebra of the loins;  $i$  the body,  $k k$  the transverse processes.

$l m m n$  The fourth of the loins;  $l$  the body,  $m m$  the transverse processes,  $n$  the superior oblique.

$o p p$  The third of the loins;  $o$  the body,  $p p$  the transverse processes.

$q q r r s$  The second of the loins;  $q q$  the superior oblique processes,  $r r$  the transverse,  $s$  the body.

$t t u u v v w$  The first of the loins;  $t t$  the superior oblique processes,  $u u$  the transverse,  $v v$  the inferior oblique,  $w$  the body.

$x x y y z z z z z z$ :  $A A A A$  The os sacrum;  $x x$  the superior oblique processes of its first vertebra,  $y y$  the sides of the os sacrum,  $z z z z z z$  the three first holes on the fore side right and left,  $A A A A$  the four superior bodies, between which are the bony lines that were formerly ligaments.

$B$  the fourth little bone of the coccyx.

$C D E F$  The sternum or breast bone;  $C$  the upper portion,  $D$  the middle one,  $E$  the inferior, or that connected with the sword-like cartilage, so called,  $F$  the sword-like cartilage.

$G H$  The ligaments by which the bones of the sternum are bound together,  $G$  by which the middle with the inferior bone,  $H$  by which the middle with the superior.

$I K L M$ :  $I K L M$  The first pair of ribs;  $K$  the little head by which it is articulated with the transverse process of the twelfth vertebra of the back,  $L$  the beginning by which it is articulated with the body of the same vertebra,  $M$  the cartilaginous extremity by which it is continued with the sternum.

$N N O P$ :  $N N O P$  The second pair of ribs;  $O$  the beginning by which it is joined with the bodies of the eleventh and twelfth vertebræ of the back,  $P$  the gristly extremity.

$Q Q Q R$ :  $Q Q Q R$  The third pair of ribs;  $R$  the gristly extremity.

$S S S T$ :  $S S S T$  The fourth pair of ribs;  $T$  the gristly extremity.

$V V V V W X$ :  $V V V V W$  The fifth pair of ribs,  $W$  the gristly extremity,  $X$  here it becomes broad, and is joined by the cartilage of the seventh rib, to which it reaches.

$Y Y Y Y Z \Gamma$ :  $Y Y Y Y Z \Gamma$  The sixth pair of ribs;  $Z$  the gristly extremity,  $\Gamma$  becoming broad at this part, and connected to the cartilage of the seventh rib, to which it reaches.

$\Delta \Delta \Delta \Theta \Lambda$ :  $\Delta \Delta \Delta \Theta \Lambda$  The seventh pair of ribs;  $\Theta$  the gristly extremity,  $\Lambda$  here it becomes broad, and is joined to the cartilage of the eighth rib.

$\Xi \Xi \Xi \Xi \Pi \Sigma$ :  $\Xi \Xi \Xi \Xi \Pi$  The eighth pair of ribs;  $\Pi$  the gristly extremity,  $\Sigma$  at this part becoming broad in some subjects, and reaching to the cartilage of the seventh rib, and united to it.

$\Phi \Phi \Phi \Phi \Psi$ :  $\Phi \Phi \Phi \Phi \Psi$  The ninth pair of ribs,  $\Psi$  the gristly extremity.

$\Omega \Omega \Omega \Omega \Omega \alpha$ :  $\Omega \Omega \Omega \Omega \Omega \alpha$  The tenth pair of ribs,  $\alpha$  the gristly extremity.

$\beta \beta \beta \beta \gamma$ :  $\beta \beta \beta \beta \gamma$  The eleventh pair of ribs,  $\gamma$  the gristly extremity.

$\delta \epsilon$ :  $\delta \epsilon$  The twelfth pair of ribs;  $\epsilon$  the gristly extremity.

$\zeta \eta \iota$ :  $\zeta \eta \iota$  The clavicles or collar bones,  $\eta$  the head that rests upon the sternum,  $\iota$  the head that reaches to the superior process of the scapula.

$\theta \theta$  The cartilages in the articulations of the clavicles with the sternum.

$\kappa \kappa$  The cartilages in the articulations of the clavicles with the superior processes of the scapulæ or shoulder blades.

$\lambda \lambda \lambda \lambda \lambda \lambda \lambda \mu \nu \xi \circ \pi$ :  $\lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \lambda \mu \nu \xi \circ \pi$  The scapulæ or shoulder blades;  $\mu$  the spine,  $\nu$  the coracoid or crow-bill process,  $\xi$  the acromion or superior process,  $\circ$  the neck,  $\pi$  the cartilaginous crust by which the neck is augmented.

#### IN THE ARMS, FORE-ARMS, AND HANDS.

$\rho \sigma \tau \nu \phi \chi \psi \omega \alpha \beta$ :  $\rho \sigma \tau \nu \phi \chi \psi \omega \alpha \beta$  The arm bones;  $\rho$  the head covered with a smooth cartilage,  $\sigma$  the larger unequable swelling of the superior head,  $\tau$  the lesser unequable swelling of the same head, between these swellings is the sinus in which slides the tendon of the longer head of the biceps muscle,  $\phi$  the sinus that receives the superior head of the radius when the fore-arm is fully bent,  $\chi$  the sinus that receives the process of the ulna when the fore-arm is fully bent,  $\psi$  a rounded head incrustated with a smooth cartilage by which it is articulated to the ulna,  $\omega$  a tubercle incrustated with a smooth cartilage by which it is articulated to the radius,  $\alpha$  the lesser condyle,  $\beta$  the greater.

$c d e f g$ :  $c d e f g$  The two ulnæ;  $d$  its superior head, with the unequable surface into which the brachialis internus muscle is inserted,  $e f$  its little head which supports the radius below, and there the surface  $f$  covered with a smooth cartilage,  $g$  the styloid process.

$h i n o p q$ :  $h k l m$  The two radii;  $i$  the superior head,  $k$  the surface of that head covered with a smooth cartilage,  $l$  the little head, at the posterior part of which is inserted the tendon of the biceps muscle, this is turned forward in the pronation of the hand,  $m n o p q$  the inferior heads,  $n$  the sinus in which slide the tendons of the long abductor and the lesser extensor of the thumb,  $o$  the sinus for the tendon of the radial extensor longior,  $p$  the sinus for the tendon of the radial extensor brevior,  $q$  the sinus for the tendon of the greater extensor of the thumb.

$r s t$ :  $r s$  The ossa navicularia, or the navicular bones of the carpus,  $s$  the protuberance articulated to the radius, covered with a smooth cartilage,  $t$  the protuberance articulated with the multangular bones, covered likewise with a smooth cartilage.

$u w$ :  $u$  The ossa lunata or lunated bones,  $w$  the tubercle covered with a smooth cartilage, whereby it is articulated to the radius.

$x x$  The ossa triquetra or triangular bones. In the right one a smooth cartilaginous crust, whereby it is articulated to the lunated bone and to the ulna.

$y$  The os subrotundum, or roundish bone.

$z A A B$ :  $z A$  The cuneiform or wedge-like bones of the carpus,  $A A$  the part covered with a smooth cartilage, articulated to the triangular and lunated bones,  $B$  the unciform or hook-like process.

$C D$ :  $C D$  The ossa capitata,  $D$  the head covered with a



smooth cartilage, articulated to the lunated and navicular bones.

E E The smaller multangular bones.

F F The greater multangular bones.

G H: G H The metacarpal bones of the thumbs, H the inferior head covered with a smooth cartilage, where it is joined with the first bone of the thumb, and with the sesamoidal bones.

I K The sesamoidal bones placed at the joint of the thumb with its metacarpal bone.

L M: L M The first bones of the thumb, M the inferior head covered with a smooth cartilage, where it is joined with the second and last bone.

N The sesamoidal bone placed at the last joint of the thumb.

O O The last bones of the thumb.

P Q R S T: P Q R S T The metacarpal bones of the hands; P the metacarpal bone of the index or fore-finger, Q the same bone of the middle finger, R of the ring finger, S of the little finger, T the inferior head covered with a smooth cartilage by which it is articulated with the finger; and the same in the rest.

V W Small sesamoidal bones found in some subjects.

X Y Z  $\Gamma$   $\Delta$ : X Y Y Z Z  $\Gamma$   $\Delta$  The first phalanges of the fingers; X that of the index, Y of the mid finger, Z of the ring finger,  $\Gamma$  of the little finger,  $\Delta$  the inferior head covered with a smooth cartilage articulated with the second phalanx; and so in the other fingers.

$\Theta$   $\Lambda$   $\Xi$   $\Pi$   $\Sigma$ :  $\Theta$   $\Lambda$   $\Xi$   $\Pi$   $\Sigma$  The second phalanges of the fingers;  $\Theta$  that of the index,  $\Lambda$  of the mid finger,  $\Xi$  of the ring finger,  $\Pi$  of the little finger,  $\Sigma$  the inferior head covered with a smooth cartilage, articulated with the third phalanx; and so in the other fingers.

$\Phi$   $\Psi$   $\Omega$   $\alpha$ :  $\Phi$   $\Psi$   $\Omega$   $\alpha$  The third phalanges of the fingers;  $\Phi$  that of the index,  $\Psi$  of the mid finger,  $\Omega$  of the ring finger,  $\alpha$  of the little finger.

#### IN THE HAUNCHES AND FEET.

$\beta$   $\gamma$   $\delta$   $\epsilon$   $\zeta$   $\eta$   $\theta$   $\iota$   $\kappa$   $\lambda$   $\mu$ :  $\beta$   $\gamma$   $\delta$   $\epsilon$   $\zeta$   $\eta$   $\theta$   $\iota$   $\kappa$   $\lambda$   $\mu$  The ossa coxarum or haunch bones;  $\beta$   $\gamma$   $\delta$  the os ilium,  $\gamma$  its crista,  $\delta$  the tubercle from which the recta cruris muscle rises,  $\epsilon$   $\zeta$  the ischion,  $\zeta$  the sinus through which passes the iliacus internus and great psoas muscles,  $\eta$  the acute process of the ischion,  $\theta$  the protuberance of the ischion,  $\iota$   $\kappa$   $\lambda$  the os pubis or share bone,  $\kappa$  the spine of the os pubis, from which rises the pectineus muscle,  $\lambda$  the tubercle in which is inserted the inferior and exterior tendon of the double aponeurosis of the external oblique muscle of the abdomen,  $\mu$  the great foramen or hole.

$\nu$  The cartilage inserted between the ossa pubis, and connecting them together.

$\xi$   $\omicron$   $\pi$   $\rho$   $\sigma$   $\tau$   $\upsilon$   $\phi$   $\chi$   $\psi$ :  $\xi$   $\omicron$   $\pi$   $\rho$   $\sigma$   $\tau$   $\upsilon$   $\phi$   $\chi$   $\chi$   $\psi$   $\psi$  The thigh bones;  $\xi$  the head covered with a smooth cartilage,  $\omicron$  the neck,  $\pi$  the great trochanter,  $\rho$  the rough eminence to which the ligament is affixed which secures the joint of the haunch,  $\sigma$  the lesser trochanter,  $\upsilon$  the exterior condyle,  $\phi$  the interior,  $\chi$  the sinus crusted with a smooth cartilage belonging to the articulation of the patella,  $\psi$  to this part reaches the smooth cartilaginous crust which covers the condyles where they are articulated with the tibiae.

$\omega$   $\omega$  The patellæ or knee pans.

$a$   $b$ :  $a$   $b$  The interior semilunar cartilages of the joints of the knees, at  $b$   $b$  they at last become ligaments, and are inserted in the tibiae.

$c$   $d$ :  $c$   $d$  The exterior semilunar cartilages,  $d$   $d$  at last they become ligaments, and are inserted in the tibiae.

$e$   $f$   $g$   $h$   $i$   $k$   $l$ :  $e$   $f$   $g$   $h$   $i$   $k$   $l$  The tibiae;  $e$  the upper head,  $f$   $g$  the smooth cartilaginous crusts covering the tops of the tibiae at the joint of the knee,  $h$  the tubercle to which is affixed the ligament proceeding from the patella, and joining it to the tibia,  $i$  the spine,  $k$   $l$  the lower head,  $l$  the inner angle.

$m$   $n$   $o$ :  $m$   $n$   $o$  The fibulæ;  $m$  the upper head,  $n$  the spine,  $o$  the lower head, which is the outer angle.

$p$   $q$   $r$ :  $p$   $q$   $r$  The bones called tali;  $q$  the smooth cartilaginous crust with which its protuberance is covered where it is articulated with the leg,  $r$  a like crust with which its head is covered.

$s$   $t$ :  $s$   $t$  The heel bones,  $t$  the part that supports the neck of the talus.

$u$   $u$  The navicular bones of the tarsi.

$v$   $v$  The great cuneiform bones of the tarsus.

$w$   $w$  The small cuneiform bones of the tarsus.

$x$   $x$  The middle-sized cuneiform bones of the tarsus.

$y$  The cubiform bone.

$z$  A B C D E:  $z$  A B C D E The bones of the metatarsus;  $z$  that of the fourth small toe, or little toe, A that of the third, B of the second, C of the first, D of the great toe, E the smooth cartilaginous crust with which the head is covered that is articulated with the first bone of the great toe; and the like in the other toes.

F G: F The sesamoidal bones placed at the joints of the great toe, with their metatarsal bones.

H H The first bones of the great toes.

I I The last bones of the great toes.

K L M N: K L M N The first phalanges of the small toes; K that of the first, L of the second, M of the third, N of the fourth.

O P Q R: O P Q R The second phalanges of the small toes; O that of the first, P of the second, Q of the third, R of the fourth.

S T V W: S T V W The third phalanges of the small toes; S that of the first, T of the second, V of the third, W of the fourth.



## TABLE II.

*A back view of the same Skeleton, in the same position. Some ligaments and cartilages are added, in order to preserve the connexion.*

### IN THE HEAD AND SPINE.

*a a* The parietal bones.  
*b b* The holes in these bones.  
*c* The sagittal suture.  
*d d* The lamdoid suture.  
*e e* The occipital bone.  
*f* The squamous suture made by the conjunction of the squamous bone with the parietal.  
*g g* True sutures made by the conjunction of the mammary bones with the parietal.  
*h* The squamous bone.  
*i i: i i* The additamenta or supplements to the lamdoid suture.  
*k k* The holes through which the internal jugular veins penetrate to the lateral sinuses of the dura mater.  
*l l* The mammillary processes of the temporal bone.  
*m* The frontal bone.  
*n* The suture formed by the conjunction of the jugal or cheek bone with the frontal bone, near the extremity of the eye-brow.  
*o* The suture formed by the conjunction of the zygomatic process of the temporal bone with the jugal or cheek bone.  
*p p* The jugal or cheek bone.  
*q* The zygomatic process of the temporal bone.  
*r* The superior maxillary bone.  
 Between *r* and the nearest *p* is the suture formed by the conjunction of the jugal with the superior maxillary bone.  
*s s* The cartilaginous lamella placed in the articulation between the lower jaw and temporal bone.  
*t u u u u* The lower jaw, *t* the little head by which it is articulated with the temporal bone.  
*w w* The parts of the superior maxillary bones that belong to the palate. In both jaws the teeth appear.  
*x x* The styloform processes of the temporal bones.  
*y y z A B C D D E* The atlas; *y y* its transverse processes, *z* the hole of the transverse process, *A* the arch which is sometimes found: this, with the sinus by which the vertebral artery passes behind the body of the atlas, forms the hole *B*, by which that artery passes into the vertebral canal, as it does at other times by the sinus in the left side *C*; *C* the sinus in the back part of the body of the atlas, where that body supports the head, through which sinus the artery passes in its way to the vertebral canal; *D D* the inferior parts of the body, where it rests upon the epistropheus; *E* the rough eminence instead of a spinal process, and from which arise the recti postici minores muscles of the head.  
*F G H H I I K K L* The epistropheus; *F* its axis, *G* the interior part of the body, *H H* the two upper parts of the body that support the atlas, *I I* the transverse processes, *K K* the inferior oblique processes, *L* the spinal process.  
*M N* Two vertebræ of the neck; *M* the fifth, *N* the fourth.  
*O P P Q Q R R* The third vertebra of the neck; *O* the spine, *P P* the superior oblique processes, *Q Q* the inferior oblique processes, *R R* the transverse processes. From this the parts of the rest of the neck may be known.  
*S T* Two vertebræ of the neck; *S* the second, *T* the first.  
*V W X Y* Vertebræ of the back; *V* the twelfth, *W* the eleventh, *X* the tenth, *Y* the ninth.  
*Z Z a a β β γ* The eighth vertebra of the back; *Z Z* the superior oblique processes, *a a* the transverse processes, *β β* the inferior oblique processes, *γ* the spinal. From this the parts of the rest of the back may be known.  
*δ ε ζ η θ ι* Vertebræ of the back; *δ* the seventh, *ε* the sixth, *ζ* the fifth, *η* the fourth, *θ* the third, *ι* the second.

*κ λ λ μ μ μ* The first vertebra of the back, whose transverse processes *λ λ* are, as it were, reflected behind the articulation of the superior oblique processes of this vertebra, with the inferior oblique of the second; *μ μ μ* the body.

*ν* The fifth vertebra of the loins.

*ξ ο ο π π ρ ρ σ σ σ* The fourth vertebra of the loins; *ξ* the spine, *ο ο* the superior oblique processes, *π π* the transverse processes, *ρ ρ* the inferior oblique, *σ σ σ* the body. From this it will be easy to know the parts of the other lumbar vertebræ.

*τ υ φ* Vertebræ of the loins; *τ* the third, *υ* the second, *φ* the first.

*χ χ*, &c. The ligaments between the bodies of the vertebræ which join them to each other.

*ψ ψ ω ω ω ω ω ω ω ω Γ Γ Γ Δ Δ Θ Λ* The os sacrum; *ψ ψ* the superior oblique processes, *ω*, &c. the posterior holes, *Γ Γ Γ* the spines, *Δ Δ* the inferior oblique processes which are joined to the superior oblique of the first little bone of the coccyx, *Θ* the body of the fourth vertebra, of which the os sacrum is composed.

Between *Θ* and *Λ* is the bony part, intervening between, and continued with, the bodies of the fourth and fifth, formerly a ligament, *Λ* the body of the fifth vertebra of the os sacrum.

Between *Λ* and *Ξ*, the ligament intervening between the os sacrum and coccyx, and binding them together.

*Ξ Π Σ* The first bone of the coccyx; *Ξ* the body, *Π* the transverse process: the like too on the other side. *Σ* the superior oblique: the like also on the other side.

Between *Ξ* and *Φ*, the ligament by which the first and second bones of the coccyx are bound together.

*Φ Ψ Ω* The little bones of the coccyx; *Φ* the second, *Ψ* the third, *Ω* the fourth.

### IN THE THORAX. CLAVICLES, SCAPULÆ, ARMS, HANDS.

*a a b b* The sternum or breast bone.

*c c d d: c c d d* The first pair of ribs, *d d* the cartilaginous part.

*e e e f: e e e f* The second pair of ribs, *f* the cartilaginous part.

*g g h: g g g h* The third pair of ribs, *h* the cartilaginous part.

*i i k: i i k* The fourth pair of ribs, *k* the cartilaginous part.

*l l m: l l m* The fifth pair of ribs, *m* the cartilaginous part.

*n n n n o o: n n n n n o* The sixth ribs, *o* the cartilaginous part.

*p p p p p q q: p p p p q q* The seventh ribs, *q* the cartilaginous part.

*r r r s: r r r r s* The eighth ribs, *s* the cartilaginous part.

*t t t u: t t u* The ninth ribs, *u* the cartilaginous part.

*w x x: w x x x* The tenth ribs, *x* the cartilaginous part.

*y z: y z* The eleventh ribs, *z* the cartilaginous part.

*A B: A B* The twelfth ribs, *B* the cartilaginous part.

*C C C C: C C C* The clavicles.

*D D* The cartilaginous lamellæ intervening between the articulations of the clavicles, with the superior processes of the scapulæ.

*E E F G H I: E E F G H I* The scapulæ; *F* the spine, *G* the superior process, *H* the neck, *I* the cartilage that incrusts the sinus of the neck.

*K L M N O P: K L M N O P* The arm bones; *K* the head covered with a smooth cartilage where it is articulated with the sinus of the scapula, *L* the large unequable tubercle of the superior head, *M* the sinus, along which are conveyed an artery, vein, and nerve, *N* the sinus which receives the



olecranon when the fore-arm is extended, O the lesser condyle, P the greater.

Q R S T: Q R S T The ulnæ, R the olecranon, S the little head by which it supports the radius below, T the styloid process.

V V W X: V W X Y Z  $\alpha \beta$  The radii, W X the superior little head, X the circumference of this little head covered with a smooth cartilage, by which it is moved on the sinus of the ulna, Y the sinus that contains the tendons of the obductor longus and extensor minor muscles of the thumb, Z the sinus that contains the tendons of the radiales externi,  $\alpha$  the sinus for the tendon of the extensor major of the thumb,  $\beta$  the sinus for the tendons of the common extensor of the fingers, of the proper extensor of the little finger, and of the indicator muscle.

$\gamma \delta \epsilon$   $\gamma$  the navicular bones of the carpus,  $\delta$  the little head, covered with a smooth cartilage, by which it is articulated to the radius,  $\epsilon$  the little head, covered with a smooth cartilage, by which it is articulated with the multangular bones.

$\zeta \zeta$  The lunated bones; that of the right hand, where it is articulated with the radius covered with a smooth cartilage.

$\eta \theta$   $\eta$  the triangular bones,  $\theta$  the surface covered with a smooth cartilage where it is articulated with the cuneiform.

$\iota \iota$  The roundish bones.

$\kappa \lambda$ :  $\kappa \lambda$  The cuneiform bones of the carpus,  $\lambda$  the surface covered with a smooth cartilage, by which it is articulated with the triangular.

$\mu \nu$ :  $\mu$  The ossa capitata,  $\nu$  the head covered with a smooth cartilage, by which it is articulated to the navicular and lunated bones.

$\xi \xi$  The lesser multangular bones.

$\omicron \omicron$  The greater multangular bones.

$\pi \rho$ :  $\pi$  The metacarpal bones of the thumbs;  $\rho$  the inferior head covered with a smooth cartilage, where it is articulated with the first bone of the thumb and with the sesamoid bones: the same in the left thumb.

$\sigma \sigma$  The sesamoid bones placed at the articulation of the thumb with its metacarpus.

$\tau \upsilon$ :  $\tau \upsilon$  The first bones of the thumbs,  $\upsilon$  the smooth cartilaginous crust, which covers that part of the inferior head that is articulated to the last bone of the thumb.

$\phi \phi$  The last bones of the thumb.

$\chi \psi \omega \Gamma \Delta$ :  $\chi \psi \omega \Gamma \Delta$  The metacarpal bones,  $\chi$  of the index,  $\psi$  of the middle finger,  $\omega$  of the ring finger,  $\Gamma \Delta$  of the little finger,  $\Delta$  the cartilaginous crust covering the inferior head, whereby it is articulated with the first phalanx: the same in the rest.

$\Theta \Lambda \Xi \Pi \Sigma$ :  $\Theta \Lambda \Xi \Pi$  The first phalanges of the fingers;  $\Theta$  of the little finger,  $\Lambda$  of the ring,  $\Xi$  of the middle,  $\Pi \Sigma$  of the index,  $\Sigma$  the cartilaginous crust covering the inferior head by which it is articulated with the second phalanx: the same in the others.

$\Phi \Psi \Omega a b$ :  $\Phi \Omega a$  The second phalanges of the fingers;  $\Phi$  of the index,  $\Psi$  of the middle finger,  $\Omega$  of the ring,  $a b$  of the little finger,  $b$  the part of the inferior head covered with a smooth cartilage to articulate with the third phalanx: the like in the rest.

$c d e f$ :  $c d e f$  The third phalanges of the fingers.

#### IN THE HAUNCHES AND INFERIOR EXTREMITIES.

$g h i k l m m$ :  $g h i i k l m$  The ossa coxarum or haunch bones;  $g h$  the os ilium,  $h$  the crista,  $i$  the ischion,  $k$  the sharp process of the ischion,  $l$  the tuberosity of the ischion,  $m$  the os pubis or share bone.

$n o p q r s t u w x$ :  $o p q r s t u w x$  The thigh bones;  $n$  the head seated in the acetabulum and covered with a smooth cartilage,  $o$  the neck,  $p$  the greater trochanter,  $q$  the lesser,  $r$  the linea aspera or rough eminence stretched along the back part of the thigh bone,  $s t$  the outer condyle, of which the part  $t$ , belonging to the joint of the knee, is covered with a smooth cartilage,  $u w$  the inner condyle,  $w$  where it belongs to the joint of the knee covered with a smooth cartilage,  $x$  the sinus between the condyles.

$y y$  The exterior semilunar cartilages, which are inserted in the joints of the knees, and becoming ligaments,  $z z$ , are at last inserted in the interior condyles.

A A The interior semilunar cartilages inserted in the joints of the knees, B B their extremities becoming ligaments are fixed in the tibiæ.

C D E F G: C D E F G The tibiæ; D E the parts of the superior head belonging to the joint of the knee covered with a smooth cartilage, F the internal angle, G the sinus through which passes the tendon of the tibialis posticus, and long flexor of the toes.

H I K L: H I K L The fibulæ; I the upper head by which it is joined to the tibia, K the external angle, L the sinus through which pass the tendons of the two peronei, the long and short.

M N O P: M N O P The tali; N O the smooth cartilage, with which its tuberosity being covered is articulated with the tibia N and with the fibula O, P the head.

Q R: Q R The heel bones, R the eminence about which is stretched the tendon of the peroneus longus.

S S The navicular bones of the tarsus.

T T The lesser cuneiform bones of the tarsus.

V V The middle cuneiform bones of the tarsus.

W W The cubiform bones.

X Y Z  $\alpha$ : X X Y Z  $\alpha$  The metatarsal bones; X that of the first of the small toes, Y of the second, Z of the third,  $\alpha$  of the fourth.

$\beta \gamma \delta \epsilon$ :  $\beta \gamma \delta$  The first phalanges of the small toes;  $\beta$  of the fourth,  $\gamma$  of the third,  $\delta$  of the second,  $\epsilon$  of the first.

$\zeta \eta$ :  $\zeta$  The second phalanges of the small toes;  $\zeta$  of the fourth,  $\eta$  of the third.

$\theta \iota \kappa$ :  $\theta$  The third phalanges of the small toes;  $\theta$  of the fourth,  $\iota$  of the third,  $\kappa$  of the second.

$\lambda$  The first bone of the great toe.

$\mu$  The metatarsal bone of the great toe.

$\nu$  The greater cuneiform bone of the tarsus.

$\xi \omicron$  The sesamoid bones placed at the articulation of the great toe with its metatarsus;  $\xi$  the internal one,  $\omicron$  the external.



## TABLE III.

*This likewise represents the same Skeleton, in a side view, but in a different position. To this are also added some ligaments and cartilages necessary to preserve the connexion.*

### IN THE HEAD AND SPINE.

A A The parietal bones.  
 B The sagittal suture.  
 C C The holes in the parietal bones.  
 D D The lamdoid suture.  
 E The occipital bone.  
 F G: F G The mammillary processes of the temporal bones; F the eminence from which the biventer muscle of the lower jaw rises.  
 H The holes, one in the mammillary bone near the appendages of the lamdoid suture, the other in that appendage itself; through which hole a vein passes to the lateral sinus of the dura mater.  
 I The appendage of the lamdoid suture.  
 K A true suture made by the conjunction of the mammillary bone with the parietal.  
 L The mammillary bone.  
 M The bony entrance to the ear.  
 N The zygomatic process of the temporal bone.  
 O The squamous bone.  
 P The squamous suture, made by the conjunction of the squamous bone with the parietal.  
 Q R S The coronal suture; Q in this part it is a true suture, R S here it is a squamous one, where the frontal bone rides at R upon the parietal, and at S upon the multiform bone.  
 T The frontal bone.  
 V The squamous suture made by the conjunction of the multiform bone and the parietal.  
 W The suture formed by the conjunction of the great lateral process of the multiform and the squamous bone.  
 X The great lateral process of the multiform.  
 Y The suture common to the frontal and jugal or cheek bone, near the extremity of the eyebrow.  
 Z That part of the jugal bone that lies in the hollow of the temples.  
 Below Z is the suture common to the jugal and superior maxillary bone in the hollow of the temple.  
 Between Z and X is the suture common to the jugal bone and the great lateral process of the multiform.  
*a* The superior maxillary bone.  
 Between *a* and X The fissure left between the superior maxillary bone, the jugal, and the multiform.  
*b* The exterior part of the jugal bone.  
*c* The suture common to the jugal bone and the zygomatic process of the temporal bone.  
*d* The superior maxillary bone.  
*e f g g* The lower jaw; *e* the coronoid process, *f* the condyle by which it is articulated with the temporal bone.  
 Directly above *f* is the cartilaginous lamella, interposed between these articulated parts of the lower jaw.  
*h i* The concave part of the left pterygoid process of the multiform bone, *i* the little hook which sustains and holds the tendon of the circumflex muscle of the palate.  
*k l* The superior maxillary bone; *k* the part that belongs to the gums, *l* the part that belongs to the palate.  
*m m m* The teeth in both jaws.  
*n o o p p q* The atlas; *n* the left part of the body where it receives the coronoid process of the occipital bone, and sustains the head by a moveable joint, *o o* the two inferior parts of the body by which it rests upon the epistropheus by moveable joints, *p p* the transverse processes, *q* the inequality in place of a spine, from which arise the recti postici minores of the head.

*r r s t u* The epistropheus; *r r* two parts of the body by which it supports the atlas by moveable joints, *s* the transverse process, in which is the hole for the vertebral artery and vein, *t* the inferior oblique process, *u* the spine forked at the extremity.  
*v w x y z* The fifth vertebra of the neck; *v* the body, *w* the transverse process, *x* the superior oblique process, *y* the inferior oblique, *z* the spine.  
*a a, &c.* The ligaments between the bodies of the vertebræ which bind them together.  
 $\beta \gamma \delta \epsilon$  Vertebrae of the neck;  $\beta$  the fourth,  $\gamma$  the third,  $\delta$  the second,  $\epsilon$  the first: their several parts may be known by those of the fifth vertebra.  
 $\zeta \eta \theta$  The twelfth vertebra of the back;  $\zeta$  the body,  $\eta$  the transverse process,  $\theta$  the spine.  
*ι κ λ* The eleventh vertebra of the back; *ι* the transverse process, *λ* the spine.  
 $\mu$  The transverse process of the tenth vertebra of the back.  
*ν ν, &c.* The passages between the vertebræ for the spinal nerves, &c.  
 $\xi \omicron \pi \rho \sigma$  The spines of the vertebræ of the back;  $\xi$  of the tenth,  $\omicron$  of the ninth,  $\pi$  of the eighth,  $\rho$  of the seventh,  $\sigma$  of the sixth.  
 $\tau \upsilon$  The fifth vertebra of the back;  $\tau$  the spine,  $\upsilon$  the body.  
 $\phi \chi \psi$  The fourth vertebra of the back;  $\phi$  the body,  $\psi$  the spine.  
 $\omega \Gamma \Delta$  The third vertebra of the back;  $\omega$  the body,  $\Gamma$  the inferior oblique process,  $\Delta$  the spine.  
 $\Theta \Theta \Lambda \Xi$  The second vertebra of the back;  $\Theta \Theta$  the body,  $\Lambda$  the superior oblique process,  $\Xi$  the spine.  
 $\Pi \Sigma \Phi$  The first vertebra of the back;  $\Pi$  the body,  $\Phi$  the spine.  
 $\Psi \Psi \Omega$  The fifth vertebra of the loins;  $\Psi \Psi$  the body,  $\Omega$  the spine.

### IN THE SPINE.

A A Æ B C C D The fourth vertebra of the loins; A A the body, Æ the superior oblique process, B the transverse, C C the inferior oblique, D the spine.  
 E F G H I The third vertebra of the loins; E the body, F the transverse process, G the superior oblique, H the spine, I the inferior oblique.  
 K The second vertebra of the loins, its parts are known by the former.  
 L M The first vertebræ of the loins; L the superior oblique process, M the spine.  
 N O P The os sacrum; N the unequable lateral part below the os ilium, O the third spine, P the inferior oblique process, articulated with the superior oblique of the first bone of the coccyx.  
 Q R The first bone of the coccyx; Q the superior oblique process, R the body.  
 S T The little bones of the coccyx; S the second, T the third.

### IN THE THORAX, SCAPULÆ, CLAVICLES.

V W X The first rib on the left side; V its beginning where it is articulated to the body of the twelfth vertebra of the back, W the little head articulated with the transverse process of the same vertebra.



**Y Z a a b** The second rib on the left side ; **Y** its beginning where it is articulated in the sinus common to the bodies of the eleventh and twelfth vertebræ of the back, **Z** the little head by which it is articulated with the transverse process of the eleventh, **b** its cartilaginous extremity.

**c** The second rib on the right side.

**d d e** The third rib on the left side, **e** its cartilaginous extremity.

**f f** The third rib on the right side.

**g h** The fourth rib on the left side, **h** its cartilaginous extremity.

**i i k** The fourth rib on the right side, **k** its cartilaginous extremity.

**l m** The fifth rib on the left side, **m** its cartilaginous extremity.

**n n o o** The fifth rib on the right side, **o o** its cartilaginous extremity.

**p p q** The sixth rib on the left side, **q** its cartilaginous extremity.

**r r s s** The sixth rib on the right side, **s s** its cartilaginous extremity.

**t t u** The seventh rib on the left side, **u** its cartilaginous extremity.

**v v w w** The seventh rib on the right side, **w w** its cartilaginous extremity.

**x y** The eighth rib on the left side, **y** its cartilaginous extremity.

**z z z, 1, 1** The eighth rib on the left side, **1, 1** its cartilaginous extremity.

**2, 3** The ninth rib on the left side, **3** its cartilaginous extremity.

**4, 4, 4, 5, 5** The ninth rib on the right side, **5, 5** its cartilaginous extremity.

**6, 6, 7** The tenth rib on the left side, **7** its cartilaginous extremity.

**8, 8, 9** The tenth rib on the right side, **9** its cartilaginous extremity.

**10, 10, 11** The eleventh rib on the left side, **11** its cartilaginous extremity.

**12, 12, 13** The eleventh rib on the left side, **13** its cartilaginous extremity.

**14, 15, 15, 16** The twelfth rib on the left side, **14** its beginning whereby it is articulated with the body of the first vertebra of the back, **16** its cartilaginous extremity.

**17** The inner side of the right scapula.

**18, 19, 20, 21, 22** The left scapula ; **19** the neck, **20** the cartilaginous part by which the neck is augmented and the sinus is covered that is articulated with the head of the arm bone, **21** the spine, **22** the superior process.

**23** The left clavicle.

**24, 24, 24** The breast bone.

#### IN THE ARMS AND HANDS.

**A B C D E F : A F G H** The arm bones ; **A** in the left, the eminence where the deltoid muscle ends. **B C D** the superior head, **B** the lesser rough tubercle of the superior head, **C** the greater rough tubercle of the same head ; between **B** and **C**, the sinus in which is contained the tendon of the longer head of the biceps muscle, **D** the smooth cartilaginous crust with which that part of the head is covered that is articulated with the sinuosity of the scapula, **E** the lesser condyle, **F** the head covered with a smooth cartilage, to which the radius is articulated ; **G** the circumference covered with a smooth cartilage, with which the ulna is articulated ; **H** the greater condyle.

**I K L : I K L M** The ulnæ ; **I** the olecranon, **L** the little head covered all round with a smooth cartilage, which is articulated with the radius, **M** the styloid process.

**N O P Q Q : N O P R S** The radii ; **O** the superior head, **P** the tubercle at the posterior part of which is inserted the tendon of the biceps muscle ; this tubercle is turned forward in the pronation of the hand. **Q Q : R S** the inferior heads, **R** the sinus through which pass the tendons of the lesser extensor and long abductor of the thumb, **S** the sinus again divided into two, through which pass the tendons of the radiales externi muscles.

**T V : T** The navicular bones of the carpi, **V** the head covered with a smooth cartilage by which it is articulated to the multanguli.

**W W** The lunated bones.

**X Y** The os triquetrum ; **X** the part covered with a smooth cartilage where it is articulated with the ulna ; a ligament intervening, which extends from the bottom of the little head of the ulna, to the bottom of the radius, where that bone is joined to the ulna.

**Z Z** The roundish bones.

**a a** The greater multangular bones.

**b b** The lesser multangular bones.

**c c c** The ossa capitata.

**d d e f** The cuneiform bones of the wrists ; **e** the part covered with a smooth cartilage where it is joined to the triangular bone, **f** the unciform process.

**g g h** The metacarpal bones of the thumb, **h** the cartilaginous crust that covers the inferior head where it is articulated with the first phalanx, and joined to the sesamoidal bones : the same in the right thumb.

**i i** The sesamoidal bones, placed at the joint of the thumb with its metacarpus.

**k k l** The first bones of the thumb, **l** the cartilaginous crust covering the inferior head where it is articulated to the last bone of the thumb.

**m m** The last bones of the thumbs.

**n n p q r : n o p r** The metacarpal bones of the hands ; **n** of the index, **p** of the middle finger, **q** of the ring finger, **r** of the little one ; **o** the smooth cartilaginous crust covering the inferior part of the metacarpal bone of the index where it is articulated to the first phalanx : and the same of the rest in both hands.

**s t u v : s t u v w** The first phalanges of the fingers ; **s** of the little finger, **t** of the ring finger, **u** of the mid finger, **v** of the index, **w** the smooth cartilaginous crust covering the inferior head where it is articulated to the second phalanx : the like in the rest.

**x y z Γ : x y z Γ Δ** The second phalanges of the fingers ; **x** the index, **y** of the middle finger, **z** of the ring finger, **Γ** of the little one, **Δ** the inferior head covered with a smooth cartilage where it is articulated with the third phalanx : the same in the rest.

**Θ Λ Ξ Π : Θ Λ Ξ** The third phalanges of the fingers ; **Θ** of the index, **Λ** of the middle finger, **Ξ** of the ring finger, **Π** of the little one.

#### IN THE HAUNCHES AND LOWER EXTREMITIES.

**Σ Φ Ψ Ω a b** The left os coxæ or haunch bone ; **Σ Φ Ψ** the os ilium, **Φ** the crista, **Ψ** the tubercle from which rises the rectus cruris muscle, **Ω a** the ischion, **a** the acute process, **b** the os pubis.

**c d e f f** The right os coxæ or haunch bone ; **c** the crista of the ilium, **d** the tubercle from which rises the rectus cruris, **e** the acute process of the ischion, **f f** the os pubis.

**g h i k l m** The left thigh bone ; **g** the head covered with a smooth cartilage which is articulated with the acetabulum, **h** the neck, **i** the greater trochanter, **l** the exterior condyle, **m** thus far extends the smooth cartilaginous crust that covers the part of the condyle belonging to the joint of the knee.

**n n o p p** The right thigh bone ; **o** the inner condyle, **p p** thus far extends the smooth cartilaginous crust that covers that part of the condyle which is articulated with the tibia and patella.

**q r : q r** The patellæ, **r** on this part, which belongs to the joint of the knee, covered with a smooth cartilaginous crust.

**s s** The exterior semilunar cartilages inserted between the joints of the knees.

**t** The interior semilunar cartilage inserted between the same joint.

**u v v w x y z : u v w x y z** The tibiæ ; **u** the superior head, **v** here where it belongs to the joint of the knee covered with a smooth cartilage, **w** the eminence where the ligament proceeding from the patella is inserted, binding that bone to the tibia.

**y z** The inferior head, **z** the internal angle.

**A B C : A B C** The fibulæ, **B** the superior head, **C** the external angle.

**D E F G : D E G** The tali, **E** here at the joint with the leg it is covered with a smooth cartilage, **F** the sinus through which passes the tendon of the long flexor of the great toe, **G** the cartilaginous crust with which the head of the talus is covered.



H: H I K The heel bones ; I the knob by which it begins, at the lower and posterior part of which are inserted the tendo achillis and that of the plantaris. It is bent backwards and upwards when we bend the joint of the leg with the extremity of the foot forwards ; K the rising part that supports the head of the talus.

L L The cubiform bones.

M M The navicular bones of the tarsus.

N The middle sized cuneiform bone of the tarsus.

O O The lesser cuneiform bones of the tarsus.

P P The larger cuneiform bones of the tarsus.

Q R S T V : Q S T V W The metatarsal bones ; Q of the great toe, R of the first of the small toes, S of the second, T of the third, V of the fourth, W the head of the metatarsal bone of the great toe, covered with a smooth cartilage where

it is joined with the first bone of that toe, and with the sesamoidal bones. The same in the others.

X The sesamoidal bones, placed at the joint of the great toe with its metatarsal bone.

Y Z  $\alpha$  : Y Z  $\alpha$   $\beta$   $\gamma$   $\Delta$  The first phalanges of the great and small toes ; Y of the great toe, Z of the first of the small toes,  $\alpha$  of the second,  $\beta$  of the third,  $\gamma$  of the fourth,  $\Delta$  the head covered with a smooth cartilage where it belongs to the articulation with the next bone. The same in the other toes.

$\epsilon$   $\epsilon$   $\zeta$   $\eta$   $\theta$  The second phalanges of the small toes ;  $\epsilon$  of the first,  $\zeta$  of the second,  $\eta$  of the third,  $\theta$  of the fourth.

$\iota$   $\iota$  The last bones of the great toes.

$\kappa$   $\kappa$  :  $\kappa$   $\lambda$   $\mu$   $\nu$  The third phalanges of the small toes ;  $\kappa$  of the first,  $\lambda$  of the second,  $\mu$  of the third,  $\nu$  of the fourth.



## TABLE IV.

*In this Table are exhibited the External Muscles, as they appear over the whole body in this position, after the common integuments and tendinous vaginae are removed, together with some ligaments belonging to them; also certain portions of the skeleton, and of other parts, as the nose, ear, and private parts, which are not covered with muscles.*

### IN THE HEAD, NECK, AND TRUNK.

*a a a b b c d e f g h: d e f g h i k l* The epicranius muscle; *a a a* the middle aponeurosis between the occipital and frontal muscles, *b b*, &c. the frontal muscles, *b b* the points by which they begin, *c* their conjunction along the middle of the forehead, *d-e d, e* here the frontal muscles end at the orbicular muscles of the eye-lids, *e-f e-f* here they are bent along the eye-brows to the greater angles of the eyes in the manner of the orbiculares, *g g* the points which bend into the greater angles of the eyes, *h h* the portions that accede to the levators of the upper lip and alæ of the nose, *i* the part that runs along the glabella and nose, *k l* its conjunction with the compressors of the nose, with which it is interwoven at *k*, and is continued with them at *l*.

*m m n o o p q r: m o o p* The orbicular muscles of the eye-lids; *m m* the part that incircles the circumference of the orbit, *n* the part that comes from the corrugator of the eye-brow, *o o* the part that covers the eye-lids, *p* the implication of the fibres that come from the eye-lids and meet near the lesser angle, *q r* the origin from the ligament by which the meeting of the eye-lids is joined to the nose in the larger angle of the eye.

*s* The ligament by which the meeting of the eye-lids in the greater angle is joined to the nose, and to that part of it that is formed by the superior maxillary bone.

*t u* The compressor of the nose; *t* its fleshy portion, *u* the aponeurosis by which the right and left are joined along the ridge of the nose.

*w x y: y* The levators of the upper lips and wings of the nose, *x* the part that proceeds to the ala along the side of the nose, *y* the extremity which becoming thin is lost on the upper lip.

*z A: z* The levators of the upper lip, *A* its thinned extremity by which it vanishes along the upper lip.

*B B* The portions proceeding from the orbicular of the eye-lids to the upper lip.

*C C* The lesser zygomatic muscles, which become thin and vanish along the upper lip.

*D D: D* The levators of the angles of the mouth; *D D* it is in part continued with the depressor of the angle, and partly bends itself round the angle of the mouth to the under lip, and there makes the exterior part of the orbicularis of the mouth.

*E F G: E* The greater zygomatic muscles, *F* their origin from the jugal or cheek bone, *G* their extremity continued with the depressor of the angle of the mouth.

*H H* The nasal muscles of the upper lip. Their origin from the nose appears, and the manner they join themselves to the orbicular of the mouth.

*I* The part of the orbicular of the mouth that is upon the upper lip, where it goes round the angle of the mouth it receives a portion from the levator of the angle going round along with it.

*K K* The part of the orbicular of the mouth that is in the red margin of the lips.

*L L* Subtile fasciculi, that proceed partly from the greater zygomatics extending hither, partly from the depressors of the angles of the mouth as it were straying. They cross or decussate the fasciculi of the depressors of the lower lip that lie under them.

*M: M N* The depressors of the lower lip, *N* here they cross each other.

*O P* The levators of the chin, *P* fasciculi which they mix with the fat of the chin.

*Q R R S: Q* The depressors of the angles of the mouth, *R R* their origin from the lower jaw, *S* their continuation with the greater zygomatic.

*T* The buccinator.

*V W X Y: V* The masseter muscles; *V* the fore and exterior part, *W* the origin of that part from the jugal bone, *X* the posterior part where it is not covered by the other, *Y* the origin of this part from the jugal bone and from the zygomatic process of the temporal bone.

*Z* The anterior muscle of the external ear.

*Γ Δ* The raiser up of the ear; *Γ* its tendinous origin where it rises from the epicranium, *Δ* its fleshy part.

*Θ* The greater muscle of the helix.

*Λ* The tragus.

*Ξ* The lesser muscle of the helix.

*Π* The antitragicus.

*Σ* The biverter muscle of the lower jaw.

*Φ* The sternomastoideus and cleidomastoideus united together.

*Ψ Ψ* The cucullares muscles.

*Ω α α α β β β γ γ δ ε ε ζ η θ: Ω α α α ζ η θ* The latissimi colli or platysmo-myoides muscles; *α α α* its origin, consisting of slender and chiefly of scattered fasciculi, *β β β* fasciculi that sometimes accede from the side of the neck, *γ γ* scattered fasciculi vanishing on the cheek by which it ends, *δ* a fasciculus stretched along the forepart of the depressor of the angle of the mouth towards the angle of that side, *ε ε* the lower jaw appearing under this thin muscle, and in the same manner *ζ* the sternomastoideus, *η* the cleidomastoideus, and *θ* the claviculæ appear.

*ι ι* The sternohyoidei.

*κ* The aspera arteria or windpipe.

*λ μ: μ* The sternomastoidei, *μ* the tendinous origin rising from the sternum.

*ν ν* The sternothyroidei.

*ξ ο ο π ρ ρ ρ: ξ ο ο π ρ ρ ρ* The pectoral muscles; *ο ο* the origin from the sternum, *π* from the cartilage of the sixth rib, *ρ* from that of the seventh rib by a slender thin and for some time tendinous origin, *s* its cohesion with the aponeurosis of the external oblique of the abdomen, *s* a portion acceding from the aponeurosis of the external oblique; here tendinous and thin, in others fleshy and thicker, and in others otherwise varying.

*σ σ* The teres major.

*τ υ φ: τ υ φ* The latissimi dorsi; *υ φ* the heads rising, *υ* from the tenth rib, *φ* from the ninth.

### IN THE TRUNK.

*χ ψ ω α β c c c c c: ψ ω α β c c c c c* The serrati magni; *χ* the head rising from the fifth rib, *ψ* from the sixth, *ω* from the seventh, *α* from the eighth, *β* from the ninth, *c c c c c* the place of the origin of the heads from the ribs.

*d e f g h i k k k k l l l m m n o o o p p p p q r r r r f s t u v v w w x: d e f g h k k k k k l l l m m n o o o p p p p q r r r r f s t u v v w w x* The external oblique muscles of the abdomen; *d* the fleshy part, *e* the head rising from the sixth rib, *f* from the seventh, *g* from the eighth, *h* from the ninth, *i* from the tenth, *k* the place of the origin of the heads from the ribs, *l l l l m m n o o o p p p p q r r r r f s t u v v w w x* the aponeurosis, *m m* here the fleshy part of the internal oblique appears under it, *n* here under the same, and likewise under the



aponeurosis of the obliquus internus, appears the fleshy part of the transverse muscle, *ooo* here in like manner appear the recti muscles, *pppp* here through the aponeuroses appear the tendinous lines of the recti, *q* here under the same appears the pyramidalis, *rrrr* the linea alba in which the aponeuroses of the external oblique muscles cross each other, are continued with each other, and mix with the parts behind them, *f* the aponeurosis inserted into the breast bone, *s* this part may be said to belong either to the aponeurosis of the external oblique or of the pectoral muscle, and therefore either to be inserted in the cartilage of the seventh rib or to arise from it, *t* the hole in the linea alba through which in the embryo passed the umbilical arteries and vein, and the urachus, *u* the bottom of the tendinous margin extending from the crista of the ilium to the pubes, *vvww* two parts into which the aponeurosis is divided, thence distinct all the way to the pubes with the appearance of tendons, whereby the fissure is formed through which passes the spermatic cord with the cremaster muscle, *x* a thinner part reaching from the one of these tendons to the other and connecting them together; under which part runs the spermatic cord and appears faintly through it, and below it, near the pubes the cord escapes through the ring of this oblique muscle, which is small, and is formed between the part *x*, the tendons *vvww*, and the os pubis; likewise the fibres of the aponeurosis that run in the manner of fleshy ones cross other fine scattered tendinous fibres, which appear sufficiently in the figure; and by these running from the one tendon through the other is formed the part *x*.

*yy* The naked cords of the spermatic vessels.

*zz* The cremasters.

#### IN THE THIGHS, LEGS, AND FEET.

*AA* The great glutæi.

*BB* The graciles.

*CC* The great adductors of the thighs.

*DD* The long adductors of the thighs.

*EE* The pectinæi.

*FF* The great psoæ.

*GG* The internal iliaks.

*HI*: *HI* The sartorii, *I* the beginning, outwardly tendinous, rising from the crista of the ilium.

*KL*: *K* The middle glutæi, *L* the origin from the crista of the ilium.

*MNO*: *MNO* The tensors of the vaginae of the thighs, *N* their origin from the crista of the ilium, *O* the extremity, from which is cut away the tendinous portion which it joins to the vaginae of the thighs.

*PQRS*: *PQRS* The vasti externi, *Q* the tendinous part, *R* the tendinous extremity, *S* where it is inserted in the patella.

*TVWX*: *TVWX* The recti muscles, *V* the tendon inserted in the patella, *W* the place where it is inserted there, *X* the aponeurosis which runs from the tendon of the rectus along the fore part of the patella, and afterwards joins itself to the fore part of the ligament which extends from the patella to the tibia.

*YZΓ*: *YZΓ* The vasti interni, *Z* the extremity of its tendon, *Γ* inserted in the patella.

*ΔΘΛ*: *ΔΘΛ* The ligaments extending from the patella to the tibiæ, *Θ* the place where it rises from the patella, *Λ* under this whole part it is inserted in the tibia.

*ΞΠΣ*: *ΞΠΣ* The bicipites of the legs, *ΠΣ* the extreme tendon, *Π* its principal part inserted in the head of the fibula, *Σ* the part that extends to the tibia.

*ΦΨΩ*: *ΦΨΩ* The sartorii, *Ψ* the tendon, *Ω* inserted in the tibia.

*αα* The semitendinosi.

*βγδ*: *βγ* The gemelli, *γ* the tendinous part, *δ* the tendon.

*εζζη*: *εζζη* The solei, *ζζ* their origin from the tibia, *η* their tendinous surface.

*θιικ*: *θιικ* The long flexors of the toes, *ιι* their origin from the tibia, *κ* the beginning of the tendon.

*λλ* The tendons of the tibiales postici.

*μμ* The tendons of the plantares.

*νν*: *ν* The tendons of achilles.

*ξξ* The solei muscles.

*οπρ*: *οπρ* The peronei longi, *π* their origin from the

head of the fibula, *ρ* the tendon arising from the exterior part of the flesh.

*σσ* The peronei breves.

*τν*: *τν* The long extensors of the toes united with the peronei tertii, *ν* their origin from the tibia.

*φχχ*: *φχχ* The peronei tertii, *χχ* the tendon in the leg and foot.

*ψωabc*: *ψωabc* The long extensors of the toes; *ψ* the tendon, *ωabc* the four tendons into which it is divided running along the foot and small toes.

*defgh* These are only inscribed on the first of the small toes of the right foot, the smallness of the objects making it impossible upon the rest, but they may all be easily understood from these, to which they are similar; *d* the common tendon of the long and short extensors of the toes, inserted in the bone of the second phalanx, *e* the tendon running to the third phalanx proceeding from the short extensor of the toes (there is none such belonging to the little toe), *f* the portion of the common tendon of the long and short extensor running to the third phalanx, *g* the common extremity of the two portions belonging to the third phalanx inserted in it, *h* the aponeurosis acceding to the tendon *d*, and proceeding partly from the capsular ligament of the joint of the toe with its metatarsus, partly from the interosseus muscle of that side, partly from the lumbricalis muscle, and partly from the side of the first phalanx.

*iiik*: *iiik* The tendons of the proper extensors of the great toes, *k* the extremity inserted in the last bone of the great toe.

*lll*: *lll* Branches of the tendons of the proper extensors of the great toes found sometimes.

*mm* Aponeuroses, which the tendons of the proper extensors of the great toes receive from the capsular ligaments of the joints of these toes with their metatarsal bones.

*noopp*: *noopp* The tibiales antici, *oo* their origin from the tibia, *ppp* the tendon.

*qrst*: *qrst* The ligaments by which the tendons are covered in the confines of the leg and back of the foot, *r* the superior extremity, *s* fixed in the tibia, *t* the inferior.

*uw*: *uw* The ligaments which bind down the tendons near the internal angles, *w* their origin from the angle.

*xx* The ligaments which bind down the tendons of the tibiales postici.

*yy*: *y* The tendons of the tibiales postici, partly inserted in the navicular bones, partly extending to the greater cuneiform bones.

*zz* The heads which accede to the long flexors of the toes in the sole of the foot, rising from the heel bones.

#### IN THE EXTREMITY OF THE FEET, THE SHOULDERS, ARMS, &c.

*ABC*: *ABC* The abductors of the great toes, *B* the origin from the side of the heel bone, *C* the tendon.

*DD* The short flexors of the great toes.

*EE* The short flexors of the small toes.

*FF*: *F* The tendons of the long flexors of the great toes.

*G* The tendon of the long flexor of the great toe, where it runs under the first phalanx of that toe contained in a sheath and bifurcated.

*HIK*: *HI* The short extensors of the toes; *H* the portion belonging to the great toe, *I* the portion running to the side of the first of the small toes next the great one, found only in some subjects, *K* the portion belonging to the first of the small toes.

*LL* The first interossei muscles of the first small toes.

*MNOPQ*: *MNOQ* The deltoid muscles; *M* the first portion of the first order whereof they consist, *N* the first of the second order, *OP* the third of the first, *P* its origin from the superior process of the scapula, *Q* the middle portion of the second order.

*RS*: *RS* The coracobrachiales, *R* here united with the short head of the biceps.

*TT* The long portion of the tricipites of the arm.

*VV* The short parts of the same.

*WXYZΓ*: *WXYZΓ* The bicipites of the arm; *W* the long head, *X* the short one, *Y* the common belly, *Z* the aponeurosis which it gives to the tendinous vaginae of the fore-arm, cut off, *Γ* its tendon that is inserted in the radius.



$\Delta \Theta$  :  $\Delta \Theta$  The parts of the tricipites of the arm called brachiales externi,  $\Theta$  the tendon that rises from the surface of the brachialis externus, and reaches to the posterior condyle of the arm bone.

$\Delta \Delta \Delta$  :  $\Delta \Delta \Delta$  The brachiales interni.

$\Xi$  The supinator brevis.

$\Pi \Sigma$  :  $\Pi \Sigma$  The supinator longus of each arm,  $\Sigma$  the tendon.

$\Phi \Phi$  The pronator teres of each arm.

$\Psi \Omega$  :  $\Psi \Omega$  The radiales interni,  $\Omega$  the tendon.

$\alpha \beta \gamma \delta \epsilon \zeta \eta \theta \iota \kappa \lambda \lambda \mu \nu$   $\alpha \beta$  the palmares longi,  $\beta$  the tendon,  $\gamma \delta \epsilon$ , &c. the aponeurosis first slightly distinguished into four portions, afterwards more so, and strengthened with transverse tendinous fibres,  $\delta$  the portion which it gives to the short abductor of the thumb,  $\epsilon$ , &c. the extremities by which this aponeurosis reaches to the roots of the fingers.

$\zeta \eta \theta \iota \kappa \lambda \lambda \mu \nu$   $\zeta \eta$  the sublimes,  $\theta$  the portion belonging to the middle finger,  $\theta$  the tendon,  $\iota \kappa$  the portion belonging to the third finger,  $\kappa$  the tendon,  $\lambda \lambda \lambda$  the portion belonging to the index,  $\mu$  that of the little finger.

$\nu \xi \omicron$  The ulnaris internus,  $\xi$  the tendon,  $\omicron$  inserted in the roundish bone of the carpus.

$\pi \rho$  :  $\pi$  The long flexors of the thumbs,  $\rho$  the tendons.

$\sigma$  The tendon of the profundus that goes to the index.

$\tau$  The pronator quadratus.

$u v$  The ligaments under which run the tendons of the long abductors and the lesser extensors of the thumbs.

$\phi \chi \psi \omega \delta \delta$  :  $\chi \omega \omega \alpha \delta \delta$  The long abductor of the thumbs,  $\chi$  the superior part,  $\psi$  the inferior,  $\omega \omega$  the tendon of the superior part,  $\alpha$  the portion it gives to the short abductor of the thumb,  $\delta \delta$  the tendon of the inferior part.

$c d$  :  $c d$  The lesser extensors of the thumbs,  $d$  the tendon.

$e$  The external armillary ligament.

$f g g g g h$  The long radialis externus,  $g g g g h$  the tendon,  $h$  inserted in the metacarpal bone of the index.

$i$  The tendon of the other and lesser long radialis externus.

$k l l l l$  The shorter radialis externus,  $l l l l$  the tendon.

$m n o p q$  The common extensor of the fingers,  $n o$  the portion belonging to the index, of which  $o$  is the tendon,  $p$  the tendon belonging to the middle finger,  $q$  that belonging to the ring finger.

$r s$  The proper extensor of the little finger,  $s$  the tendon.

#### IN THE LEFT HAND.

$t$  The aponeurosis by which the tendon of the index  $o$  and of the middle finger  $p$  are united, and in like manner are united the tendons of the middle and ring fingers, and of the ring and little one; but neither upon these, nor upon the divisions and conjunctions of the tendons of the extensor communis and proper of the little finger are letters inscribed on account of their smallness; and besides the whole of them will be better understood from the first table of the back parts of the body.

$u u$  The tendon of the indicator.

$w$  The first interosseus muscle of the index.

$x$  The abductor of the index.

$y$  The tendon of the greater extensor of the thumb.

$z$  The opponent muscle of the thumb.

$A B$  The common tendon of the greater and lesser extensor of the thumb, inserted  $B$  in the last bone of the thumb.

$C$  The aponeurosis surrounding the capsular ligament of the joint of the thumb with its metacarpal bone, tied to that ligament, and joined to the common tendon of the extensors of the thumb.

$D$  The posterior tail of the short flexor of the thumb.

$E$  The aponeurosis which the posterior tail of the short flexor of the thumb gives to the common tendon of the extensors of the thumb.

$F G$  The adductor of the thumb,  $G$  its tendinous extremity inserted in the first bone of the thumb.

$H$  An aponeurosis, which rising partly from the first lumbricalis, partly from the abductor of the index, joins itself to the common tendon of the extensors of the index.

$I$  The tendon of the first lumbricalis.

$K L$  The common tendon of the indicator and extensor communis running to the index,  $L$  its extremity inserted in the second bone.

$M$  The tendon of the first lumbricalis, augmented by a portion received from the common tendon of the extensors of the index running to the third bone of the index.

$N$  The tendon of the posterior interosseus of the index, which being augmented by a portion received from the common tendon of the extensors of the index, runs to the third bone of the index.

$O$  The common tendinous extremity inserted in the third bone of the index, this extremity is composed of the tendons  $M$  and  $N$  united into one.

$P P$  The tendons of the common extensors of the fingers where they run along the back of the fingers with the aponeuroses which they receive.

$Q$  The common tendon of the extensors of the little finger, where it runs along the back of that finger.

$R$  The tendon common to the first interosseus of the middle finger and the second lumbricalis; which tendon being augmented by a portion received from the tendon of the extensor communis runs to the third bone.

$S$  The tendon of the sublimis.

$T$  The ligament that covers the tendon of the profundus, and also the extreme tails of the tendon of the sublimis.

$V$  A tendon of the profundus.

The same  $S T V$  in the remaining three fingers: the letters are not inscribed on account of the smallness of the parts.

#### IN THE RIGHT HAND.

$W W$  The ligament of the carpus, which together with the sinus of the carpus forms a canal, that contains and binds down the tendons of sublimis, profundus, and long flexor of the thumb, running from the fore arm to the fingers.

$X$  The opponens of the thumb.

$Y Z \Gamma \Delta$  The short abductor of the thumb,  $Z$  its origin from the ligament of the carpus,  $\Gamma$  part of its tendinous extremity inserted in the first bone of the thumb,  $\Delta$  a thin tendinous part that mounts upon the back of the thumb, and unites with the fore part of the tendons of the extensors of the thumb; and further is continued, along the exterior part of these tendons, to a similar aponeurosis of the short flexor of the thumb.

$\Theta$  The common tendon of the extensors of the thumb.

$\Lambda$  Part of the short flexor of the thumb, which may be reckoned another short abductor of the thumb; its tendinous extremity inserted in the first bone of the thumb.

$\Xi \Xi \Pi$  The tendon of the long flexor of the thumb split as it were into two,  $\Pi$  the extremity that reaches to the last bone of the thumb.

$\Sigma$  The oblique ligament by which the tendon of the long flexor of the thumb is fixed to the first bone of the thumb, at first one and then split into two tails.

$\Phi$  The posterior tail of the short flexor of the thumb.

$\Psi$  The adductor of the thumb.

$\Omega$  The first lumbricalis.

$a$  The first interosseus of the index.

$b$  The abductor of the index inserted by its tendinous extremity in the first bone of the index.

$c d e$  The abductor of the little finger,  $d$  its origin from the ligament of the carpus,  $e$  from the roundish bone of the carpus.

$f$  The adductor of the metacarpal bone of the little finger.

$g g$  The palmaris brevis.

$h$  The small flexor of the little finger.

$i$  The fourth lumbricalis.

$k$  The third.

$l$  The second.

$m$  The first interosseus of the middle finger.

$n$  The first of the ring finger.

$o$  The first of the little finger.

$p$  The common tendon of the small flexor and the abductor of the little finger.

$q$  The common tendon of the fourth lumbricalis and the first interosseus of the little finger.

$r$  The tendon of the posterior interosseus of the ring finger.

$s$  The tendon common to the third lumbricalis and the first interosseus of the ring finger.

$t$  The tendon of the posterior interosseus of the middle finger.

$u$  The common tendon of the second lumbricalis and the first interosseus of the middle finger.

$v$  The tendon of the posterior interosseus of the index.



*w* The tendon of the first lumbricalis.

*x* The tendon of the sublimis, on the part of which next the thumb is the tendon of the profundus, whereon no letter is put by reason of the smallness of the part.

*y z* The tendon of the profundus split as it were lengthways, *z* inserted in the third bone.

**2, 2** The horns of the tendon of the sublimis.

**3** The ligament that covers the tendon of the sublimis and profundus, where they run along the first phalanx, fixed to both margins of the first bone.

**4, 4, 4** Three ligaments that retain the tendons of the sublimis and profundus at the joint of the finger with the metacarpus. They are thick, and by their middle thinner parts they are not only continued to one another, but also to the next ligament **3** of the same finger.

**5** The ligament that covers the tendon of the profundus and the extreme tails of the tendon of the sublimis, about the middle of the second bone, fixed to both margins of the second bone.

The same *x y z* **2, 2, 3, 4, 4, 4, 5** also in the other fingers, which easily appear though no letters are inscribed.

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To the parts of the skeleton, that rise or are conspicuous between the muscles, I have put no marks; because they may be easily known from the First Table of the skeleton, which figure is entirely the same, and the foundation of this, lying as it were or hid under it; for in order to construct this figure the muscles and other parts were placed upon that skeleton.



## TABLE V.

The Figure of this Table is the back part of what is represented in the first. It likewise exhibits the whole Muscular System, after the common integuments and tendinous vaginae are removed; and moreover the ligaments belonging to the muscles; the ears, and part of the scrotum, and the naked parts of the skeleton.

### IN THE HEAD, NECK, BACK, HIPS, AND THIGHS.

*a b c*: *a b c d d e* The epicranius or muscle of the scalp; *a b* the occipital muscle, *a* its tendinous beginning, *b* the fleshy part, *c d d* the aponeurosis between the occipital and frontal muscle, *d d* here the temporal muscle appears and rises behind it, *e* the membranous part by which the occipitals and their aponeuroses are united together, arising above the origin of the cucullares from the os occipitis.

*f g* The raiser of the ear; *f* its tendinous beginning where it rises from the epicranius, *g* its fleshy part.

*h* The frontalis.

*i* The orbicular of the eye-lids.

*k* The anterior of the ear.

*l* The lesser of the helix.

*m n o* The three retractors of the ear.

*p q* The masseter; *p* the posterior part of the interior portion, which is naked from the exterior portion, *q* the exterior portion.

*r* The greater zygomatic.

*s* The internal pterygoid.

*t* The latissimus colli.

*u w*: *u w x* The sternomastoid with the cleidomastoid united together, *w* the tendinous extremity, *x* inserted in the occipital bone.

*y y* The biventer of the neck inserted in the occipital bone.

*z z* The splenii of the head.

*A* The levator scapulæ.

*B C D E F G H H*: *B C D E F G H H* The cucullares; *B* the fleshy part, *C D E F* the tendinous origin, *C* in this part rising from the occipital bone, *D E F* in this whole course it externally coheres with its fellow, below rising from all the spines of the back, the two inferior of the neck, and the ligament of the neck behind, *E* the large tendinous portion of the beginning at the lower part of the neck and upper part of the back, *F* another of the same kind in the lower angle, *G* the tendinous part of the extremity where it is inserted in the spine of the scapula not far from its basis, *H H* the tendinous part of the extremity inserted in the spine and superior process of the scapula.

*I K*: *I K* The infraspinati, *K* the origin from the base of the scapula.

*L*: *L* The greater rhomboidei, inserted in the bases of the scapulæ.

*M*: *M* The sacrolumbales.

*N*: *N* The teres minor right and left.

*O*: *O* The teres major right and left.

*P Q R R S T V*: *P Q R R S T V* The latissimi dorsi; *F* the fleshy part, *Q* the broad tendon by which it begins, *R R* its origin from the spines of the loins and the os sacrum, *S* its origin from the oblique processes which lie at the side of the open of the os sacrum, *T* its cohesion with the great glutæus, *V* its origin from the crista of the ilium.

*W X*: *W X* The fleshy part of the external oblique muscles of the abdomen, *X X* inserted in the crista of the ilium.

*Y Z*: *Y Z a* The glutæi medii, *Z* their origin from the os ilium, *a* the tendon.

*β β* The tensors of the vaginae of the thighs.

*γ δ δ*: *γ δ δ* The glutæi magni, *δ δ* here it arises from the crista ilium and the sacrum, and coheres with the latissimus dorsi.

*ε* The levator of the anus. There is also a small part of the right one upon the right side.

Between *ζ* and *η* the transverse of the perinæum.

*η* The external sphincter of the anus.

*θ θ* The great adductors of the thighs.

*ι κ*: *ι κ* The graciles, *κ* the tendon.

*λ λ* The sartorii.

*μ μ* The vasti interni.

*ν ν ξ ο*: *ν ν ξ ο* The semimembranosi, *ξ* the origin of the tendon from the fleshy part, *ο* the tendon.

*π ρ*: *π ρ* The semitendinosi, *ρ* the tendon.

*σ τ τ υ φ χ*: *σ τ τ υ φ χ* The bicipites of the legs; *σ* the longer head, *τ τ* the shorter head, *υ φ χ* the tendon, *υ* first arising from the surface of the fleshy part of the longer head, then augmented by the accession of the shorter *φ*, and by its extremity *χ* inserted in the superior head of the fibula.

*ψ ω*: *ψ ω* The vasti externi, *ψ* the tendinous surface.

### IN THE LEGS, EXTREMITY OF THE FEET, AND SHOULDERS.

*Γ c*: *Γ c* The plantares.

*Δ*: *Δ* The poplitæi.

*Θ l*, &c.: *Θ l*, &c. The peronei longi.

*Λ Ξ Ξ Π Σ Σ Φ*: *Λ Ξ Ξ Π Σ Σ Φ* The gemelli; *Λ Ξ Ξ* the exterior head, *Ξ Ξ* the tendinous surface, *Π Σ Σ* the interior head, *Σ Σ* the tendinous surface, *Φ* the tendon.

*Ψ Ω*: *Ψ Ω* The tendons of achilles, *Ω Ω* inserted in the heel bones.

*a a b*: *a a b* The solei, *b* the tendinous surface.

*c c* The tendons of the plantares.

*d d* The tendons of the tibiales postici.

Between the tendons *d* and *Ψ* in the left foot, and between *d* and the tendon of the plantaris in the right, lie the tendons of the long flexors of the toes.

*e e* The ligaments that bind down the tendons at the internal angles as they run near them.

*f f* The long flexors of the great toes.

*g h i i k*: *g h i k* The peronei breves, *h* the origin of the tendon from the fleshy part, *i i* the tendon, *k* inserted in the fifth metatarsal bone.

*l m m m*: *l m m m* The peronei longi, *m m m* the tendon.

*n n* The ligaments that bind down the tendons of the peronei longi and breves at the external angles.

*o o* The ligaments proper to the peronei breves.

*p p* The ligaments proper to the peronei longi.

*q q* The ligaments by which the tendons in the confines of the legs and insteps are bound down.

*r r* The tendons of the long extensors of the toes.

*s s* The tendons of the peronei tertii, inserted in the metatarsal bones of the little toes.

*t t* The short extensors of the toes.

*u w x y z*: *u w x y z* The abductors of the little toes; *u* here covered with an aponeurosis, *w* the origin from the heel, *x* the aponeurosis by which the part is covered that is inserted in the metatarsal bone of the little toe, *y* the tendon of the abductor, inserted in the first bone of the little toe, *z* the aponeurosis acceding to that tendon of the long extensor of the toes that belongs to the little toe.

*a β*: *a* The short flexors of the small toes; *a* the part inserted in the metatarsal bone of the little toe, *β* the part inserted in the first bone of the little toe by a tendinous extremity.

*γ γ* The tendon of the long flexor of the great toe, running between the sesamoid bones.



δ The abductor of the great toe.

ε The short flexor of the toes.

ζ η η θ ι κ λ μ ν : ζ η η θ ι κ λ μ The deltoid muscles ; ζ η η the second and posterior of the portions of the first order whereof that muscle consists, η η arising from the spine and superior process of the scapula, θ ι the posterior portion of the second order, ι arising from the superior process, κ λ the fourth portion of the first order, λ arising from the turn of the arm of the superior process, μ ν the middle portion of the second order, ν arising from the superior process.

ξ ο π ρ σ τ υ φ χ : ξ ο π ρ σ τ υ φ χ The tricipites of the arms ; ξ the brevis, ο the longus, π the brachialis externus, ρ the common tendon of these three heads, σ the tendinous part made by the longus, and which is joined to the common tendon τ of the right arm, the tendinous part made by the brachialis externus, and joined to the common tendon, the τ of the left arm is placed at the rise of the tendinous from the fleshy part, υ the tendinous part arising from the surface of the brachialis externus, and reaching to the greater condyle of the os humeri, φ the common tendon inserted in the olecranon, χ the more slender extremity of the same tendon, inserted in the fore part of the olecranon, and in the neighbouring part of the spine of the ulna.

ψ ψ The brachiales interni.

ω ω The supinatores longi.

#### IN THE FORE ARMS AND RIGHT HAND.

A B C D D D D : A B C The longer radiales externi, B the origin from the lesser condyle of the arm bone, C their conjunction and common origin with the common extensor of the fingers and the ulnaris externus, D D D D the tendon inserted in the metacarpal bone of the index.

E E The brachiales externi, arising from the roots of the lesser condyles.

F G : F The anconeus, G the tendon, arising from the lesser condyle of the arm.

H : H I I I The shorter radiales externi, I I I the tendon.

K K The profundus, rising from the ulnæ.

L L The palmares longi.

M : M N O P Q The sublimes, N the portion going to the middle finger, O the part going to the index, P to the ring finger, Q to the little one.

R S T V : R S T V The ulnares interni, S T their origin, S the one rising from the greater condyle of the arm, and cohering with the common tendinous head of the muscles rising from that condyle, T the other rising from the olecranon, V the tendon inserted in the roundish bone of the carpus.

W X Y Y : W X Y Z The ulnares externi, X the origin conjoined with that of the common extensor of the fingers, Y Z the tendon, Z reaching to the fourth bone of the metacarpus. Between the tendon Z and the tendon c, on the back of the right hand, is a small tendon from this ulnaris externus reaching to the little finger.

a b c c : a b c c The proper extensors of the little finger, b its origin conjoined with that of the common extensor of the fingers, c c the tendon running along the back of the hand as it were slightly split.

d : d e f f g h i k l m n o p p q r r s The common extensors of the fingers ; e f f g h i k l m n o the portion reaching to the ring finger, f f the tendon going to that finger along the back of the hand having incisions, g a branch of this tendon which is afterwards split into two, one of which h joins itself to the tendon c of the little finger, but is not always found ; the other i is again split into two, one of which k likewise accedes to the tendon c of the little finger, the other (between k and the lower f) accedes to the trunk f of the tendon of the ring finger, l a portion going from the tendon f and acceding to the tendon c of the little finger, m a tendinous portion by which the trunk of the tendon f going to the ring finger is joined with the tendon c of the little finger at the beginning of the fingers, which portion is composed of the portions k and l, and below these of the aponeurosis going off from the tendon f, all united together, n the branch joined to the tendon p of the middle finger, not always found, o the tendinous portion by which the trunk of the tendon f going to the ring finger, is joined with the tendon p of the middle finger near the roots of the fingers, and this portion is composed of the tendon n united with the aponeurosis that comes off from the trunk f of the tendon of the ring finger near the root of that finger, p p the tendon that goes to the middle finger, in

which is a fissure where it runs along the hand, q r r the portion going to the index, r r the tendon, s the aponeurosis which rising from the tendon p of the middle finger, accedes to the tendon r of the index, and connects them together near the roots of the fingers.

t The tendon of the indicator.

u The tendon afterwards running along the index, composed of the tendon t of the indicator united with that tendon r of the common extensor that goes to the index.

v w x y z z z z z The tendons of the extensors of the fingers where they run along the fingers joined with the tendons and aponeuroses of the interossei, lumbricales, &c. v that of the index composed of the tendon t of the indicator conjoined with the tendon r from the extensor communis, w that of the middle finger, x that of the ring finger, which two are from the common extensor, y that of the little finger, which is composed of the tendon c of the proper extensor of the little finger, conjoined with the portions h and k l m acceding from the common extensor, and a portion from the ulnaris externus, z, &c. the extremities of these tendons inserted in the bones of the second order.

α The aponeurosis which reaches from the capsular ligament of the little finger with its metacarpus to the extensor tendon y.

β γ The abductor of the little finger, γ the tendon.

δ ε The common tendon of the abductor and small flexor of the little finger, δ conjoined with the tendon γ and augmented by a portion from it, ε it runs to the third bone.

ζ The aponeurosis which accedes to the tendon γ, its superior part coming from the capsular ligament of the joint of this finger with its metacarpal bone, its inferior being produced from the tendon η of the interossei of the little finger, with which tendon is joined the tendon of the fourth lumbricalis.

η The tendon of the interossei of the little finger, to which is joined the tendon of the fourth lumbricalis.

θ ι The tendon common to these two muscles ; θ joined with the tendon γ and being augmented by a portion from it, ι runs to the third bone.

κ The common extremity of the united tendons ε ι reaching to the third bone.

λ The aponeurosis which accedes to the tendon x, its superior part coming from the capsular ligament of the joint of this finger with its metacarpus, its inferior produced from the tendon ν of the posterior interossei of the little finger.

μ μ ν ξ ο The posterior interossei of the ring finger, ν the tendon that afterwards is joined ξ with the tendon x, and being augmented by a portion from it, ο runs to the third bone.

π The aponeurosis that accedes to the tendon x, its superior part coming from the capsular ligament of the joint of this finger with its metacarpus, the inferior being produced from the tendon ρ of the fore interossei of the little finger, with which tendon is joined the tendon of the third lumbricalis.

ρ The tendon of the fore interossei of the little finger, to which is joined the tendon of the third lumbricalis.

σ τ The tendon common to the fore interossei of the little finger and the third lumbricalis ; σ conjoined with the tendon x, and being augmented by a portion from it, τ it runs to the third bone.

υ The common extremity of the united tendons ο τ reaching to the third bone.

φ The aponeurosis that accedes to the tendon w, its superior part coming from the capsular ligament of the joint of this finger with its metacarpus, the inferior being produced from the tendon ψ of the posterior interossei of this middle finger.

χ ψ ω Γ The posterior interossei of the middle finger, ψ the tendon which is united ω with the tendon w, and being augmented by a portion from it, Γ runs to the third bone.

Δ The aponeurosis that accedes to the tendon w, its superior part coming from the capsular ligament of the joint of this finger with its metacarpus, the inferior being produced from the tendon Ξ of the fore interossei of this middle finger, with which tendon is united that of the second lumbricalis.

Θ Θ Θ Λ Ξ The fore interossei of the middle finger ; Θ Θ Θ the heads arising Θ Θ Θ from the metacarpal bone of the index, Λ from that of the middle finger, Ξ the tendon with which is united that of the second lumbricalis.

Π Σ The tendon common to the fore interossei of the middle finger and the second lumbricalis, Π united with the tendon w, and being augmented by a portion from it, Σ runs to the third bone.

Φ The common extremity of the united tendons Γ Σ, reaching to the third bone.



ψ The aponeurosis that accedes to the tendon *v*, its superior part coming from the capsular ligament of this joint with its metacarpus, its inferior being produced from the tendon 2 of the posterior interosseus of the index.

1, 2, 3, 4 The posterior interosseus of the index, 2 the tendon which is afterwards united 3 with the tendon *v*, and being augmented by a portion from it, runs 4 to the third bone.

5, 6 The aponeurosis that accedes to the tendon *v*, its superior part 5 being produced from the abductor of the index, and its inferior 6 from the first lumbricalis.

7 The tendon of the first lumbricalis, which afterwards is united 8 with the tendon *v*, and being augmented with a portion from it, runs 9 to the third bone.

10 The common extremity of the united tendons 4, 9, reaching to the third bone.

11 The fore interosseus of the index.

12 The abductor of the index.

13 The tendon of the great extensor of the thumb.

14, 15 The ligament that binds down the tendon of the ulnaris externus, arising from the radius between that ulnaris and the extensor of the little finger, ending at the tendon of the ulnaris internus, and here 15 united with the ligament 16.

16, 17, 18, 19 The exterior armillary ligament, arising 17 from the roundish bone, 18 from the triangular, 19 from the eminence of the radius that on the fore part terminates the sinus along which run the tendons of the radiales externi.

20 The ligament by which are bound down the tendons of the long abductor and lesser extensor of the thumb, in one part rising from the same eminence of the radius as the ligament 16.

21, 22, 23, 23 The long abductor of the thumb, 22 the tendon of the superior part, 23, 23 that of the inferior.

24, 25 The lesser extensor of the thumb, 25 the tendon.

26 The common extremity of the united tendons of the greater 13 and the lesser extensors 25 of the thumb reaching to the third bone.

27, 28 The aponeurosis that is joined to the common extremity 26 of the tendons of the extensors of the thumb; part of which aponeurosis 27 surrounds the capsular ligament of the joint of the thumb with its metacarpus, and is connected with that ligament; part of it 28 proceeds from the posterior tail of the short flexor of the thumb.

Between 27 and 29 the posterior tail of the short flexor of the thumb.

29, 30 The adductor of the thumb, 30 the tendinous extremity inserted in the first bone of the thumb.

#### IN THE EXTREME PART OF THE LEFT FORE ARM, AND IN THE LEFT HAND.

*a* β The exterior armillary ligament, β inserted in the roundish bone, and continued with the ligament γ δ.

γ δ The ligament that binds down the tendon of the ulnaris externus, δ ending at the tendon of the ulnaris internus.

ε The pronator quadratus.

ζ The ligament that makes a canal with the sinus of the carpus, by which the tendons are inclosed that proceed from the fore arm to the hand, viz. those of the sublimis, profundus, and long flexor of the thumb.

η The portion of the tendon of the long abductor of the thumb that it gives to the short abductor.

θ ι κ The short abductor of the thumb, ι here it receives a portion from the aponeurosis of the palmaris longus, κ the tendinous extremity, with the aponeurosis that it gives to the tendon of the extensors of the thumb.

λ The part of the short flexor of the thumb, which may be looked upon as a second short abductor of it; inserted by its tendinous extremity in the first bone of the thumb.

μ Two ligaments, by which is bound down the tendon of the long flexor of the thumb; one of them higher at the joint of the thumb with its metacarpus; the other immediately below it, fixed to the margins of the first bone, at first single, afterwards bifurcated.

ν ν The tendon of the long flexor of the thumb, inserted in the last bone of the thumb.

ξ The posterior tail of the short flexor of the thumb, inserted in the first bone and in the posterior sesamoidal.

ο The first lumbricalis.

π The adductor of the thumb.

ρ The aponeurosis of the palmaris longus.

σ σ The palmaris brevis.

τ υ φ The abductor of the little finger, υ φ rising υ from the roundish bone, φ from the interior of the carpus.

χ The small flexor of the little finger.

ψ The tendon common to the small flexor of the little finger, and the abductor of the same, united to the extensor tendon of that finger.

ω The extremity of the extensor tendon of the little finger reaching to the second bone.

Γ The tendon running to the third bone, composed of the tendon ψ, and of a portion of the extensor tendon of the little finger added to it.

Δ Δ The same tendons as ο τ υ, 4, 9, 10 in the right hand.

Θ The ligament that binds down the tendons of the sublimis and profundus, where they run along the first phalanx.

Α Three ligaments that bind down the tendons of the sublimis and profundus at the joint of the finger with its metacarpus. I have inscribed a letter only on the middle one, on each side whereof lies one of the others.

Ξ The tendons of the sublimis and profundus.

Π The tendon of the profundus with one horn of the sublimis.

Σ The tendon of the profundus.

The same things are pointed out at Θ: Α: Ξ: Π: Σ in the other fingers.



## TABLE VI.

*As in the First Table, so in this, the first order of the Muscles is represented after the common integuments and tendinous vaginae are removed; together likewise with certain ligaments belonging to them, and parts of the third skeleton, which is the basis of this Figure; also portions of other parts, to wit, of the nose, ear, and genitals, which are not covered with muscles.*

### IN THE HEAD, NECK, AND TRUNK.

*a b c : a b c d e f* The epicranius or muscle of the scalp; *a b* the occipitalis, *a* its tendinous beginning, *b* the fleshy part, *c d* the aponeurosis between the frontal and occipital muscles, *d* through which the temporal muscle here rising appears, *e* the membranous part, by which the occipitales and their aponeuroses are joined together, rising from the occipital bone above the origin of the cucullares, *f* the frontalis.

*g h* The raiser of the ear; *g* its tendinous beginning where it goes off from the epicranius, *h* the fleshy part.

*i* The anterior of the ear.

*k l m* The three retractors of the ear.

*n* The greater of the helix.

*o* The lesser of the helix.

*p* The tragicus.

*q* The antitragicus.

*r s t t* The orbicular of the eyelids; *r* the part that goes round the circumference of the orbit, *s* the part added from the corrugator of the eye-brow, *t t* the part that covers the eyelids.

*u* The compressor of the nose.

*v* The nasal of the upper lip.

*w x : w x* The orbicular of the mouth, *x* the part on the red margin of the lip.

*y z* The greater zygomatic, *z* its origin from the jugal or cheek bone.

*α β* The depressor of the angle of the mouth, *β* its origin from the lower jaw.

*γ* The buccinator.

*δ ε ζ η θ* The masseter; *δ ε* the fore and exterior part, *ε* its origin from the jugal bone, from whence for a good space it is tendinous externally, *ζ η θ* the posterior part not covered by the former, *η θ* its origin *η* from the jugal bone, *θ* from the zygomatic process of the temporal bone.

*ι κ* The internal pterygoid muscle, *κ* inserted in the lower jaw.

*λ* The stylohyoideus.

Between *κ* and *λ* the styloglossus. Compare Table X. fig. 2. *m*.

Immediately under the styloglossus the basioglossus. Compare Tab. X. fig. 1. *k*. and fig. 2. *s*.

*μ ν ξ ο π* The latissimus colli, *ν ν*, &c. fasciculi or little bundles of fibres added to it in some subjects at the side of the neck, *ξ* scattered fasciculi vanishing on the cheek by which it ends, *ο* a fasciculus running along the fore part of the depressor of the angle of the mouth towards that angle.

*π* The lower jaw rising under the latissimus colli.

*ρ σ* The sternomastoideus and cleidomastoideus united together, *σ* their tendinous extremity.

*τ* The biverter of the neck inserted by a tendinous extremity in the occipital bone.

*υ* The splenius of the head.

*φ* The splenius of the neck.

*χ* The scalenus medius.

*ω ψ* The raiser of the scapula.

*ω Γ Δ : ω Γ Θ Λ Λ Ξ* The cucullares, *Γ Δ* the tendinous origin, *Γ* the part of it rising from the occipital bone, *Θ* a larger part of its tendinous origin near the lower part of the neck and upper part of the back, *Λ Λ* the tendinous part of the extremity, inserted in the spine and superior process of the scapula, and in the neighbouring part of the clavicle, *Ξ* the tendinous part of its extremity where it is inserted in the spine of the scapula not far from its basis.

*Π Σ Π* The infraspinati, *Σ* their origin from the basis of the scapula.

*Φ* The teres minor.

*Ψ* The teres major.

*Ω Ω A B C D E F* The latissimi dorsi; *Ω* the fleshy part, *A* the broad tendon by which it begins, *B* here it coheres with the great glutæus, *C* its origin from the crista of the ilium, *D E F* the heads which rise from the ribs, *D* from the eleventh, *E* from the tenth, *F* from the ninth.

*G* The serratus anticus.

*H I* The pectoralis, *I* the portion coming from the aponeurosis of the external oblique of the abdomen.

*K L M N O P Q R*, &c. The great serratus; *K* the head that rises from the third rib, *L* from the fourth, *M* from the fifth, *N* from the sixth, *O* from the seventh, *P* from the eighth, *Q* from the ninth, *R*, &c. the place of the origin of the heads from the ribs.

*S T U V W X Y Z a a a a b b b b b c c d d d d e f f g h h h h i i i k* The external oblique muscle of the abdomen; *S* the fleshy part, *T U V W X Y Z* the heads, whereof *T* rises from the fifth rib, *U* from the sixth, *V* from the seventh, *W* from the eighth, *X* from the ninth, *Y* from the tenth, *Z* from the eleventh, *a*, &c. the tendinous part of the origin of the heads, *b*, &c. the place of the origin of the heads from the ribs, *c c* the insertion of the fleshy part in the crista of the ilium, *d d d d e f f g h h h h i i i k* the aponeurosis, *e* inserted in the crista of the ilium, *f f* here the fleshy part of the internal oblique rises and appears under it, *g* here under the same and also under the aponeurosis of the internal oblique rises and appears the fleshy part of the transverse muscle, *h h h h* and so here the fleshy part of the rectus muscle, *i i i* here through these aponeuroses appear the tendinous lines of the rectus, *k* here under the same rises and appears the pyramidalis.

*l* The cremaster.

### IN THE LEFT HAUNCH AND FOOT.

*m* The long adductor of the thigh.

*n* The pectineus.

*ο* The great psoas.

*p* The sartorius.

*q r s* The tensor of the vagina of the thigh, *r* its origin from the crista of the ilium, *s* the extremity from which is cut the tendinous part that it gives to the vagina of the thigh.

*t u u v* The middle glutæus, *u u* its origin from the os ilium, *v* the tendon.

*w x y* The great glutæus, *x* here it rises from the crista of the ilium, and coheres with the latissimus dorsi, *y* the tendon.

*z* The semitendinosus.

*α β γ δ ε ζ* The biceps of the leg; *α* the longer head, *β β* the shorter head, *γ δ ε ζ* the tendon, *γ* first rising from the surface of the fleshy part of the longer head, then augmented by an accession from the shorter *δ*, and its principal extremity *ε* inserted in the head of the fibula, and reaching to the tibia by a certain portion *ζ*.

*η θ ι κ* The vastus externus, *θ* the tendinous surface, *ι* the tendon, *κ* inserted in the patella.

*λ μ ν ξ ο* The rectus of the leg, *μ* the tendinous part of the origin, *ν* the tendon, *ξ* the place where it is inserted in the patella, *ο* the aponeurosis from the tendon of the rectus that runs along the fore part of the patella, and afterwards joins



tselt to the fore part of the ligament that reaches from the patella to the tibia.

$\pi \rho$  The vastus internus,  $\rho$  the tendon.

$\sigma \tau \nu$  The ligament going from the patella to the tibia,  $\tau$  the place where it rises from the patella,  $\nu$  under all this space it is inserted in the tibia.

$\phi \chi \psi$  The exterior head of the gemelli,  $\chi$  the tendinous surface,  $\psi$  the tendon.

$\omega \Gamma \Delta$  The soleus,  $\Gamma$  rising from the superior head of the fibula,  $\Delta$  the tendinous surface.

$\Theta \Lambda \Xi$  The tendon of achilles,  $\Lambda$  the interior part,  $\Xi$  here inserted in the heel bone.

$\Pi$  The tendon of the plantaris.

$\Sigma \Phi \Psi \Omega \Omega \Omega$  The peroneus longus,  $\Phi$  its origin from the head of the fibula,  $\Psi \Omega \Omega \Omega$  the tendon,  $\Psi$  here rising from the fleshy part.

$A$  The proper ligament of the peroneus longus.

$B B C C D D E$  The peroneus brevis,  $C C$  the origin of the tendon from the fleshy part,  $D D$  the tendon,  $E$  inserted in the fifth bone of the metatarsus.

$F$  The ligament proper to the peroneus brevis.

$G H I K L M N O P Q R$  The long extensor of the toes with the peroneus tertius;  $G$  the common fleshy part of the extensor and peroneus,  $H$  its origin from the tibia,  $I$  the peroneus tertius,  $K L M$  its tendon,  $K$  here rising from the fleshy part,  $M$  here inserted in the metatarsal bone of the little toe,  $N$  the tendon of the long extensor of the toes which is divided into four tendons,  $O P Q R$ , running along the instep.

$S S S T$  The tendon of the proper extensor of the great toe,  $T$  inserted in the last bone of that toe.

$U V W W$  The tibialis anticus,  $V$  its origin from the tibia,  $W W$  the tendon.

$X Y Z$  The ligament that covers the tendons in the confines of the leg and instep before,  $Y$  the superior horn,  $Z$  the inferior.

$a a a b c d e$  The short extensor of the toes,  $b c d e$  its tendons,  $b$  that going to the great toe,  $c$  to the first of the small toes,  $d$  to the second,  $e$  to the third.

$f g h i k l$  The common tendon of the long and short extensors of the toes;  $f$  the part produced by the long,  $g$  the part by the short; there is an intermediate mark of division;  $h$  the extremity inserted in the bone of the second order,  $i$  the portion of the common tendon going to the third bone,  $k$  the tendon from the other side running to the third bone and proceeding from the tendon of the short extensor,  $l$  the common extremity of the two portions going to the third bone, inserted in the third bone. The same in the other small toes of this foot, only the tendon of the long extensor runs along the upper part of the little toe, and produces both portions going to the third bone.

$m$  The aponeurosis that is added from this side to the tendon of the short extensor of the toes. The same in the other toes; but in the small toe it is added to the tendon of the long extensor, in the great toe to the tendon of the proper extensor.

$n$  The first interosseus muscle of the second toe.

$o$  The thicker head of the second interosseus of the second toe.

$p$  The thicker head of the second interosseus of the third toe.

$q$  The thicker head of the second interosseus of the fourth toe.

$r s t u v$  The abductor of the little toe,  $s$  here covered with an aponeurosis,  $t$  its origin from the heel bone, a part of the aponeurosis with which it is covered inserted in the metatarsal bone of the little toe,  $v$  the tendon of the abductor inserted in the first bone of the little toe.

$w x$  The short flexor of the little toe;  $w$  the part inserted in the metatarsal bone of the little toe,  $x$  the part inserted by a tendinous extremity in the first bone of the little toe.

$y z$  The tendons of the long and short flexors of the toes, seen also in the next toe.

#### IN THE RIGHT FOOT.

$A B C$  The rectus of the leg,  $B$  the tendon inserted in the patella,  $C$  the aponeurosis from the tendon running over the patella, and joining itself to the fore part of the ligament that joins the patella to the tibia.

$D E F G$  The ligament that joins the patella to the tibia,  $E$  the part under which it rises from the patella,  $F$  under all this space it is inserted in the tibia,  $G$  its interior part.

$H I$  The vastus internus,  $I$  the extremity of its tendon inserted in the side of the patella.

$K L M$  The sartorius,  $L$  the tendon,  $M$  inserted in the tibia.

$N O$  The gracilis,  $O$  its tendon.

$P Q R S$  The semimembranosus,  $Q R$  the tendon,  $Q$  rising here from the fleshy part,  $S$  the anterior aponeurosis inserted in the internal margin of the tibia.

$T U$  The semitendinosus,  $U$  the tendon.

$V W X$  The interior head of the gemelli,  $W$  the tendinous surface.

$X$  The tendon, it joins to the exterior part of the tendon of the soleus.

$Y$  The tendon of achilles,  $Z$  inserted in the heel bone.

$\Gamma \Delta \Theta \Theta$  The soleus,  $\Delta$  the tendinous surface,  $\Theta \Theta$  rising from the tibia.

$\Lambda \Xi$  The tendon of the plantaris,  $\Xi$  inserted in the heel bone.

$\Pi \Sigma$  The long flexor of the great toe,  $\Sigma$  the tendon.

$\Phi$  The ligament that binds down the tendon of the long flexor of the great toe.

$\Psi \Omega \Omega a$  The long flexor of the toes,  $\Omega \Omega$  its origin from the tibia,  $a$  the tendon rising from the fleshy part.

$\beta \beta \gamma$  The tendon of the tibialis posticus,  $\gamma$  its extremity inserted in the tuberosity of the navicular bone.

$\delta \epsilon \epsilon$  The ligament that covers the tendon of the long flexor of the toes, and that of the tibialis posticus,  $\epsilon \epsilon$  here fixed to the internal angle.

$\zeta$  The ligament that binds down the tendon of the tibialis posticus.

$\eta \theta \theta \theta$  The tibialis anticus,  $\theta$ , &c. its tendon.

$\iota \kappa$  The superior horn of the ligament inserted in the tibia by which the tendons are bound down in the confines of the leg and instep, inserted in the tibia,  $\kappa$  the inferior horn of the same ligament.

$\lambda \lambda \mu$  The tendon of the proper extensor of the great toe,  $\mu$  inserted in the last bone of the great toe.

$\nu$  A branch of the tendon of the proper extensor of the great toe, inserted in the first bone of that toe, and found in some subjects.

$\xi$  The aponeurosis added to the tendon of the proper extensor of the great toe.

$o$  Upon these toes the common tendons of the extensors.

$\pi \pi$  The two horns of the ligament by which the tendon of the long flexor of the great toe is bound down here.

$\rho$  The tendon of the long flexor of the great toe running under that toe.

$\sigma s \tau$  The abductor of the great toe,  $\tau$  its origin from the heel bone,  $s$  its tendon,  $\tau$  inserted in the first bone of the great toe.

$\nu \nu \phi$  The short flexor of the great toe,  $\phi$  here joining itself to the tendon of the abductor.

$\chi \psi$  The short flexor of the toes,  $\chi$  its origin from the heel bone.

$\omega$  The head that is added to the long flexor of the toes in the sole of the foot rising from the heel bone.

#### IN THE LEFT ARM AND HAND.

$A B B C D E F G H I K L M N O$  The deltoid muscle;  $A B B$  the second and posterior portion of the first order of which that muscle consists,  $B B$  rising from the spine and superior process of the scapula,  $C D$  the posterior portion of the second order,  $D$  rising from the superior process,  $E F$  the fourth portion of the first order,  $F$  rising from the turn of the superior process,  $G H$  the middle portion of the second order,  $H$  rising from the superior process,  $I K$  the third portion of the first order,  $K$  rising from the superior process,  $L M$  the first portion of the second order,  $M$  rising from the superior process,  $N O$  the first and fore portion of the first order,  $O$  its origin from the superior process.

$P Q R$  The biceps,  $Q$  its tendon,  $R$  the aponeurosis cut off.

$S$  The brachialis internus.

$T U V W X$  The triceps;  $T$  the part of it called longus,  $U$  the part called brevis,  $V$  the tendon,  $W$  inserted in the olecranon,  $X$  the more slender end of the tendon inserted in the fore part of the olecranon, and in the neighbouring part of the spine of the ulna.

$Y$  The ulnaris internus.

$Z a$  The supinator longus,  $a$  the tendon.

$b$  The pronator teres.

$c d$  The radialis internus,  $d$  the tendon.

$e e$  The sublimis.

$f f$  The long flexor of the thumb.



*g* The tendon of the second radialis externus longior.  
*h i i i k* The radialis externus longior, *i i i k* the tendon, *k* inserted in the metacarpal bone of the index.  
*l m m m* The radialis externus brevior, *m m m* the tendon.  
*n o* The ulnaris externus, *o* the tendon.  
*p q r s t* The common extensor of the fingers, *q* the tendon belonging to the index, *r* that belonging to the middle finger; which two tendons not far from the fingers are joined by the portion *s*, going from the tendon of the middle finger to that of the index, *t* the tendon going to the third finger.  
*u* The tendon of the indicator.  
*v w* The proper extensor of the little finger, *w* the tendon.  
*x y y z z* The long abductor of the thumb, *y y* the tendon of the superior portion which being divided at the extremity sends one part to the short abductor, and the other to the metacarpal bone of the thumb, *z z* the tendon of the inferior portion.  
*α β* The lesser extensor of the thumb, *β* the tendon.  
*γ γ* The tendon of the greater extensor of the thumb.  
*δ ε* The common tendon of the greater and lesser extensor of the thumb, *ε* reaching to the last bone of the thumb.  
*ζ ζ* The exterior armillary ligament.  
*η* The ligament that binds down the tendons of the long abductor and lesser extensor of the thumb.  
*θ* The interior ligament of the carpus.  
*ι κ* The short abductor of the thumb, *κ* the aponeurosis which it gives to the common tendon of the extensor of the thumb.  
*λ* The opponens of the thumb inserted in the external margin of the metacarpal bone of the thumb.  
*μ* The aponeurosis that joins itself to the tendon of the greater extensor of the thumb, partly rising from the capsular ligament of the joint of the thumb with its metacarpus, partly from the short flexor of the thumb.  
*ν ξ* The adductor of the thumb, *ξ* inserted by a tendinous extremity in the first bone of the thumb.  
*ο* The fore interosseus of the index, rising from its metacarpal bone.  
*π* The abductor of the index.  
*ρ* The first lumbricalis.  
*σ* The aponeurosis that partly rises from the abductor of the index, partly from its lumbricalis, and is joined to the tendon of the extensors of the index.  
*ς τ* The common tendon of the extensors of the index, *ς* its extremity inserted in the second of the index.  
*τ υ* The tendon of the first lumbricalis, which being augmented by a portion received from the common tendon of the extensors, *υ* runs to the third bone of the index.  
*φ* The tendon of the second interosseus of the index, together with the portion it has received from the common tendon of the extensors, running to the third bone of the index.  
*χ* The common extremity of the tendons *υ* and *φ*, belonging to the third bone of the index and inserted in it.  
*ψ* The tendon common to the second lumbricalis and the first interosseus of the middle finger; which tendon being augmented by a portion received from the tendon of the extensor of the middle finger, runs to the third bone of that finger, in the end joined into a common extremity with a like

tendon coming from the other side of that finger, which is inserted in the third bone of the same finger.

*ω* The tendon common to the fourth lumbricalis and the first interosseus of the little finger; which tendon being augmented by a portion received from the extensor tendon of that finger, runs to the third bone of the same.

Along the internal parts of the fingers run the tendons of the sublimis and profundus, bound down by their ligaments, but they are more clearly seen in the first table of the muscles.

#### IN THE RIGHT ARM.

*α β γ δ ε* The triceps of the arm; *α* the part called longus, *β* the part called brachialis externus, *γ* the tendon of the triceps, *δ* inserted in the olecranon, *ε* the thin tendon rising from the surface of the brachialis externus, and reaching to the upper part of the greater condyle of the arm bone.

*ζ* The brachialis internus.

*η θ ι* The biceps of the arm, *θ* the aponeurosis cut off, near the tendon.

*κ* The supinator longus.

*λ* The pronator teres.

*μ* The radialis internus.

*ν ξ* The palmaris longus, immediately below *ξ* the beginning of the tendon.

*ο* The sublimis.

*π ρ σ* The ulnaris internus, *ρ* one of its origins from the greater condyle of the arm bone, *σ* the other from the olecranon.

*τ* The ulnaris externus.

#### IN THE RIGHT HAND.

*a b* The short abductor of the thumb, *b* the aponeurosis going off from its tendon, and joining itself to the common tendon of the extensors of the thumb.

*c* Part of the short flexor of the thumb, which may be esteemed a second short abductor of it, inserted by its tendinous extremity in the first bone of the thumb.

*d* That part of the short flexor of the thumb that is inserted in the sesamoidal bone next to the index, and to the neighbouring part of the first bone of the thumb.

*e* The adductor of the thumb.

*f f* The tendon of the long flexor of the thumb.

*g* Two ligaments that bind down the tendon of the long flexor of the thumb, *μ* in the left hand, Tab. V. of Albinus.

*h* The palmaris brevis.

*i* The short flexor of the little finger.

*k* The abductor of the little finger.

*l* The adductor of the fourth metacarpal bone, inserted in that bone.

Letters are not inscribed upon the tendons and aponeuroses that run along the back of the hand and fingers, as they may be easily understood from the second muscular table, which is the fifth, as this third is the ninth, of Albinus.















































































































